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Transportation Show

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NOVEMBER, 1937

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NOVEMBER, 1937

COMMERCIAL CAR JOURNAL

NOVEMBER, 1937 VOL. LIV, NO. 3

THE TRUCK INDUSTRY

Presents

**The 1938 HIGHWAY
TRANSPORTATION**

Show

COMMERCIAL CAR JOURNAL'S second annual Highway Transportation Show celebrates with pride the biggest year in the history of the truck industry. In production, in sales and in total registrations 1937 will be a record year.

Production will be just short of the million mark. COMMERCIAL CAR JOURNAL estimates the total output will reach 955,000, an increase of 17 per cent over 1936.

Domestic sales will reach 635,000 units, a jump of 3.6 per cent from the 1936 figure.

Total U. S. truck registrations will reach the high level of 4,400,000, an increase of around 10 per cent.

A glance at the pages of this issue will show that products, too, have

(TURN TO PAGE 20, PLEASE)

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reached new heights of excellence. With them the industry will make a bid for new records in 1938.

THE most decided trend in truck design in recent years has been towards the close-coupled vehicle commonly called camelbacks. This type of truck is also called cab-forward, engine-under-seat, and cab-over-engine. These latter names are used to distinguish design differences but all of them have in common the fact that they eliminate that part of truck length roughly represented by the hood in the conventional truck. Wheelbases have been shortened in trucks of similar capacity making them much easier to handle in cramped quarters. Visibility has been improved and while riding qualities proved to be a serious hurdle at first the difficulties in this respect have been overcome to such an extent that many drivers now prefer this type of vehicle, which provides a seat for them at the front of the truck.

Keeping pace with the improved chassis is the application of highly specialized bodies. The truck being a burden vehicle, originally suffered from the efforts of manufacturers to make the truck accommodate as many different types of cargoes as possible with a standard body. This brought about compromises with the result that the standard truck and equipment carried no type of load to the complete satisfaction of the operator. More recently bodies adapted to specific loads have become the rule rather than the exception and the result has been reflected in lowered costs.

INSULATION and mechanical refrigeration units have made it possible to move perishables over the road. Liquids such as milk, motor fuels and chemicals are no longer a problem to transport at reasonable cost. Public utility trucks are almost fantastic in their ability to act as power base and store house for

construction crews. Some of the Federal projects such as dams could not have been started without first building a railroad were it not for specialized trucks. Door-to-door deliveries have been speeded up and local freight, protected from weather, arrives earlier.

THE weight distribution of the truck has been improved and this together with a general reduction in weight made possible through the use of new metals has resulted in a more favorable load to vehicle weight ratio. The propulsion units of the vehicle, the engine, transmission and rear axle, through a slow process of development through the years reached a stage where they are trouble-free for high mileages if they are maintained on a periodical basis.

Advertising value has been recognized as a factor in truck design and new finishes and lines make the truck as good looking within limits as the passenger car.

Autocar models across the top: 6x4NF six-wheeler with de luxe cab, 139-152-in. wheelbase; New York City's UT151 with 2500 gal. tank, and a West Coast diesel application. Below: Model UT, with 124-in. wheelbase and fitted with streamline cab; newly-developed six-man cab which on the 124-in. UB chassis allows 67-in. CA dimension; 84-in. UA, shortest truck for its capacity





TRUCKS

Section one

AUTOCAR

Presents

Greatly Widened Line of Trucks for 1938 Including Conventional, Engine-Under-Seat and Cab-Forward Designs. Emphasizes Its Heavy-Duty Attitude



AUTOCAR will enter 1938 with a greatly widened line of trucks, including Conventional, Engine-under-the-Seat and Cab-Forward designs. With the industry and the trade cognizant of advantages of short-wheelbase handiness, Autocar is in favorable position for not only do they hold exclusive patents on the Engine-under-the-Seat design but also, in their UA and UB light models, they have developed a short practical wheelbase.

That 84-in. standard wheelbase in Autocar Models UA and UB, has already developed interesting possibilities in eastern cities where coal men

(TURN TO PAGE 80, PLEASE)

CHEVROLET

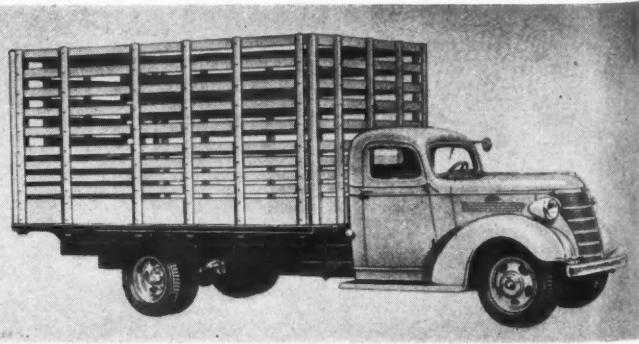
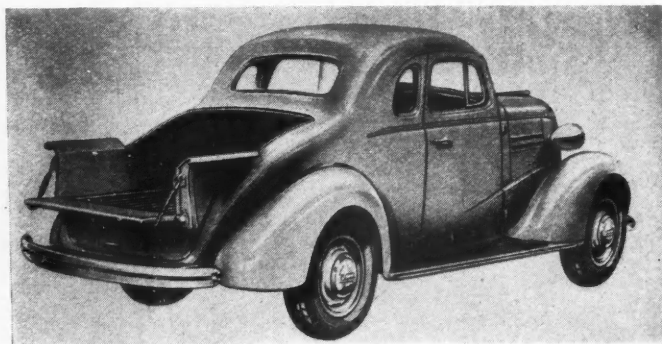
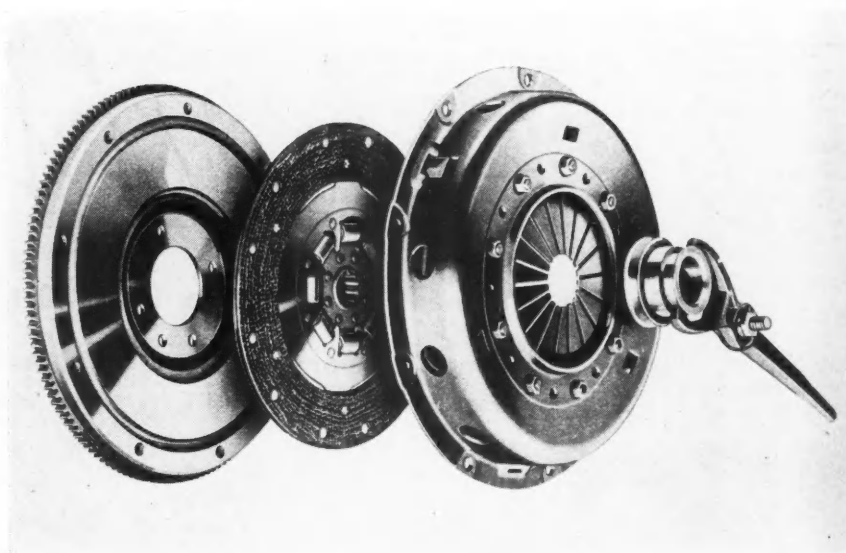
Presents

CHEVROLET'S line of trucks for 1938 comprises a wide selection of models on six different chassis. The new three-quarter-ton and one-ton series, recently introduced in response to insistent demand for trucks of intermediate capacity, is continued for 1938.

The entire line has undergone extensive improvement, through engineering refinements. Its appearance has been modernized and beautified by redesigning of radiator grille and hood. Outstanding among the mechanical improvements is the new diaphragm-type clutch, providing softer yet more positive engagement, greater operating ease, and increased durability, all in conjunction with greater simplicity and lighter weight.

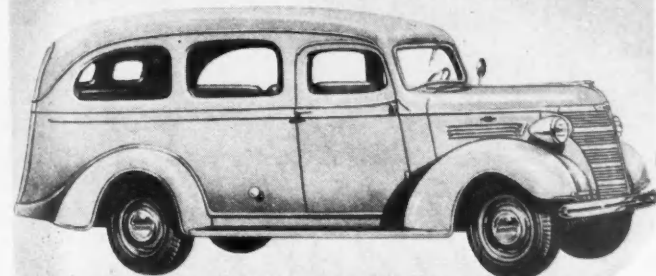
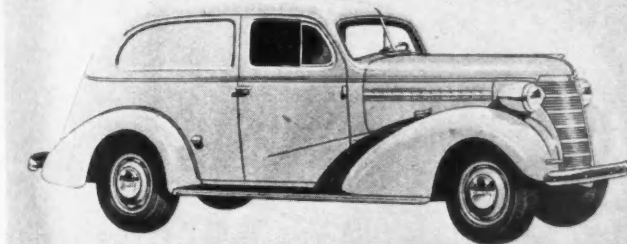
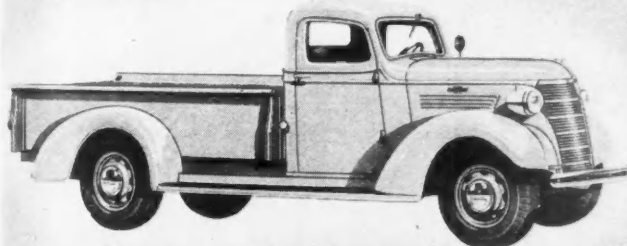
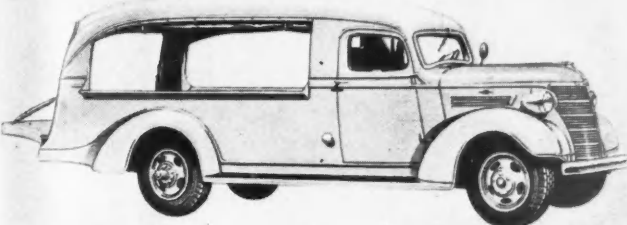
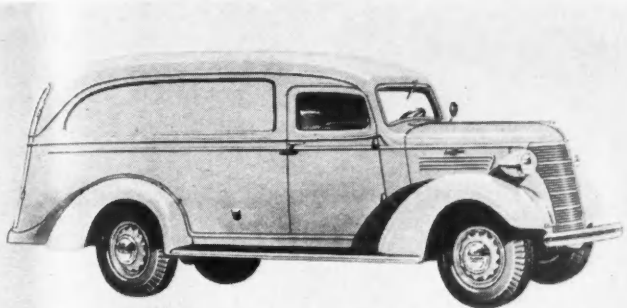
In the light delivery series, two 1938 commercial vehicles are available on the 112¼-in. wheelbase passenger car chassis. These are the coupe pick-up and the sedan delivery models. Half-ton models, all on a 112-in. wheelbase truck chassis, include the pick-up.

1938 Line With Appearance Modernized and Beautified. New Diaphragm-Type Clutch Now Being Used



Section one

T RUCKS



panel, canopy express, and carry-all suburban.

The three-quarter-ton and the one-ton series each include pick-up, stake, and panel models, and both are built on chassis having a wheelbase of 122 $\frac{1}{4}$ in.

The ton-and-one-half series, includes the pick-up, stake, canopy express, and panel models on a 131 $\frac{1}{2}$ -in. wheelbase chassis, and high rack, stake express, and stake models on a chassis with a wheelbase of 157 in.

The radiator grille and shell reflect attractive new styling. The grille may be easily removed for repair or replacement in the event of damage. Concurrently with easier grille removal, the truck radiator core, shell and support are also redesigned to facilitate core removal.

The hood top panel contour is clean and graceful. One horizontal bead extends back from the radiator grille to join the belt moulding of the cowl. There are three horizontal hood louvers. In addition, a belt line beginning just forward of the lower louver extends upward and forward at an angle of approximately 30 deg. from the vertical until it is above the upper louver; then it sweeps straight back in a horizontal line. The headlamp support, pad and reinforcement have been modified to
(TURN TO PAGE 74, PLEASE)

Chevrolet 1938 models shown at left are: 3/4-ton panel, 122 $\frac{1}{4}$ -in. w.b.; 1/2-ton canopy, 131 $\frac{1}{2}$ -in. chassis; 1-ton pickup, 122 $\frac{1}{4}$ -in. w.b.; sedan delivery on the Master chassis, and suburban in 1/2-ton series. Opposite page: New diaphragm-type clutch, coupe pick-up on Master and 157-in. 1/2-ton stock rack



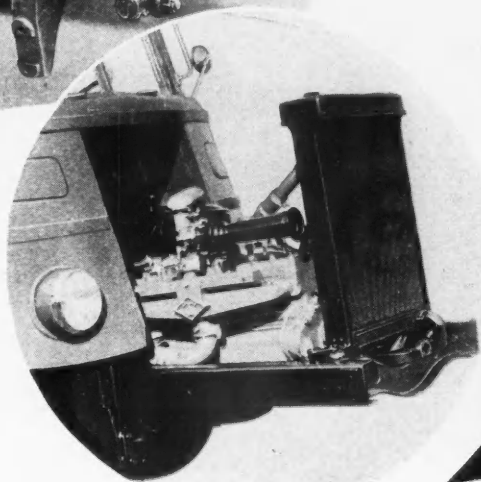
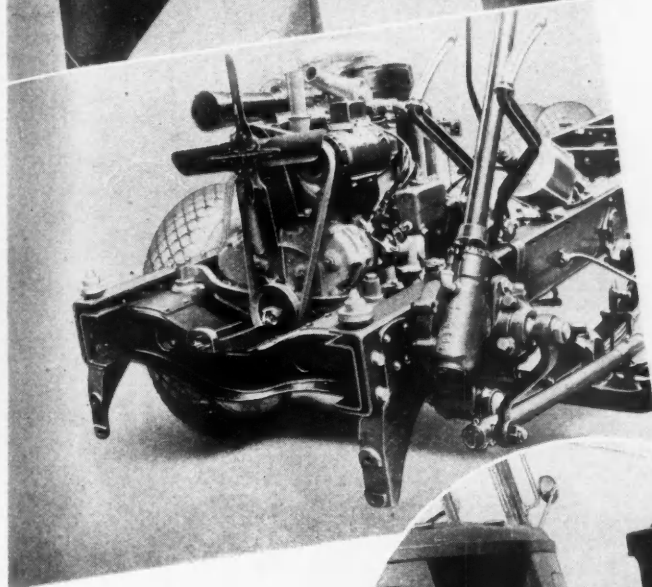
DIAMOND

Presents

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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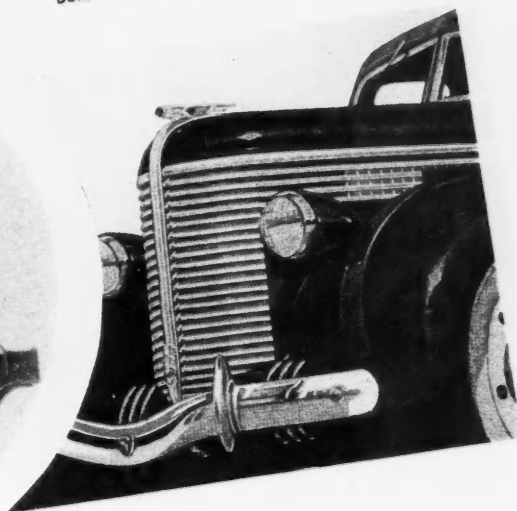
COMM
NOVEM



T RUCKS

Section one

Suggestive of streamline railroad design, the new C.O.E. Diamond T bears no resemblance to the standard line. On opposite page may be seen the cab interior where both seat and steering column are adjustable, details of the chassis' front end, and the engine sub-frame rolled out for servicing. Below—Diamond T's 1938 front-end styling.



T

A Distinctive Cab-Over-Engine Design in Five Models, Each Available in Seven Wheelbases. Engine Is Carried on Sub-Frame for Servicing

A COMPREHENSIVE line of five Cab-over-Engine models, each available in seven wheelbases, is announced by the Diamond T Motor Car Co. Capacity range is from 1½ to 4 tons, and body-lengths to 24 ft. are provided for on all models.

In addition to important advances in engineering design, the appearance of these models presents a radical departure from the conventional. It is not like that of any other cab-over-engine truck, and is equally different from the Diamond T standard line.

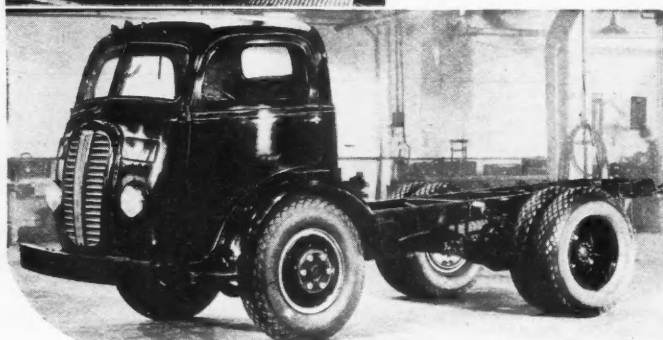
The new models measure only 24 in. from the front axle to the back of the
(TURN TO PAGE 74, PLEASE)

DODGE

Presents



A New Line of Restyled Commercial Cars and Emphasizes 19 "Econ-o-misers" Throughout Entire Truck Line With Features Effecting Operating Economies



Roominess and accessibility are provided in the new Dodge COE model on the 3-ton chassis. Other pictures on these pages show views of the

DODGE has a full line of new commercial cars, as well as trucks of the medium and heavy-duty classes.

The 19 "Econ-o-misers" featured by Dodge throughout the entire truck line should be of special interest to fleet buyers. They include features said to effect savings in gas and oil consumption and tire wear.

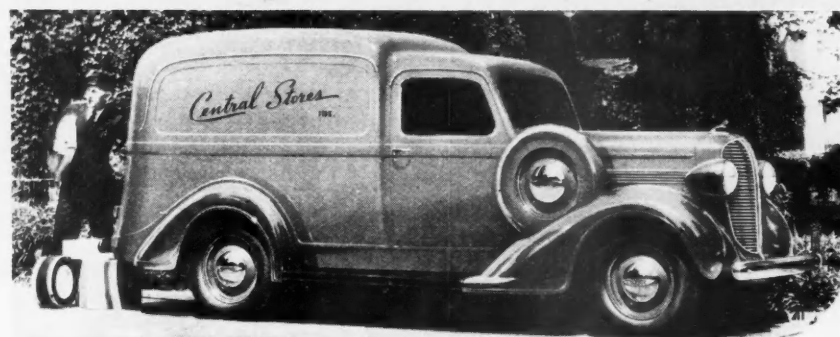
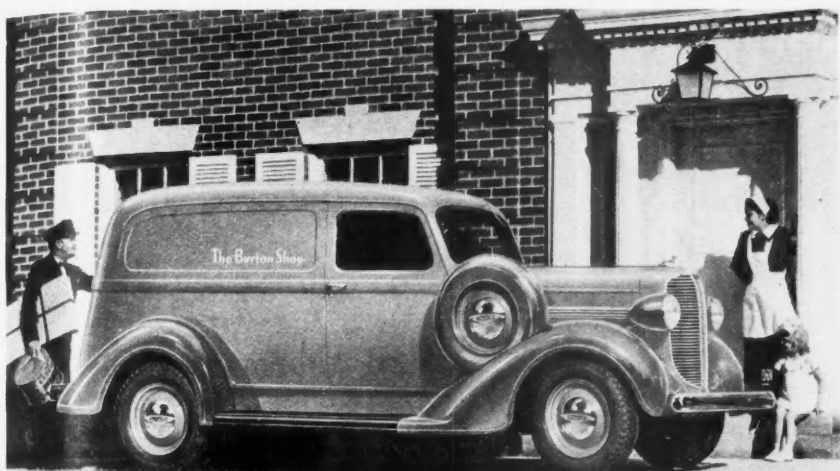
Commercial models are: Panel, canopy, screen, commercial sedan and pick-up. The $\frac{3}{4}$ -1-ton series will include panel, express, chassis with cab, and two stake jobs in two wheel bases.

The new Dodge commercial cars have a chassis with 116 in. wheelbase and their gross rating is given at 4000 lb. The engine has a 218 cu. in. piston displacement with a high compression cylinder head of 6.5 ratio. Vacuum spark advance also is another economy feature. Exhaust valve seat inserts, bypass thermostat and full-length water jackets are continued.

The commercial car engine develops 75 hp. at 3000 r.p.m. The clutch is 10 in. in diameter and has a spring cushion disc with molded woven facings.

Designed especially for commercial car requirements is a three-speed transmission assembly which has 3.3 low and 4.3 reverse ratios and a quiet second speed constant-mesh helical gear. Final drive ratio is 12.87 with the standard rear axle. A standard power take-off opening of the four bolt type is located on the right-hand side of the transmission. The cast iron emergency brake, 6 in. in diameter, is mounted at the rear of the transmission. Semi-floating axle is a hypoid.

Available axle ratios are: 3.9 as



new commercial car models which are made available in a variety of body styles.

standard and as extra equipment 3.54 and 4.78. The 4.78 ratio is used with 20 in. wheel equipment and is available as extra equipment if greater road clearance is desired.

Unusual features of the $\frac{3}{4}$ -ton models follow: Truck-type engine, truck-type transmission, high compression cylinder head and vacuum spark advance. Available as extra equipment are telescopic airplane-type shock absorbers.

The $\frac{3}{4}$ -ton trucks have solid disc wheels and wheelbase lengths of 120

and 136 in. Cab to rear axle dimensions of 41 $\frac{11}{16}$ and 57 $\frac{11}{16}$ in. permit the use of 7 ft. express body on the 120-in. wheelbase chassis and a 9-ft. body on the 136-in. wheelbase chassis. Other features of the $\frac{3}{4}$ -ton models follow: The engine has 218.06 cu. in. displacement, with 3 $\frac{3}{8}$ -in. bore, and 4 $\frac{1}{16}$ -in. stroke. It develops 75 hp. and its four points of suspension are cushioned in rubber.

Other mechanical features of its engine are: Exhaust valve seat inserts, by-pass thermostat, water distributor

Section one TRUCKS

tube and full-length water jackets. This $\frac{3}{4}$ -ton has a heavy truck type of frame that is 6 $\frac{1}{8}$ in. deep. Strong cross members increase the torsional rigidity. The clutch is 10 in. in diameter and has a self-lubricated ball bearing release.

This truck is equipped with hydraulic brake drums 11 in. in diameter on the front wheels and 13 in. on the rear wheels. Linings are 2 in. wide and stepped bore wheel cylinders equalize wear between the front and rear brake shoes of each wheel. Front springs are 36 in. long and each has 12 leaves. Springs at the rear are 52 in. long and have 11 leaves. The rear axle is semi-floating spiral bevel.

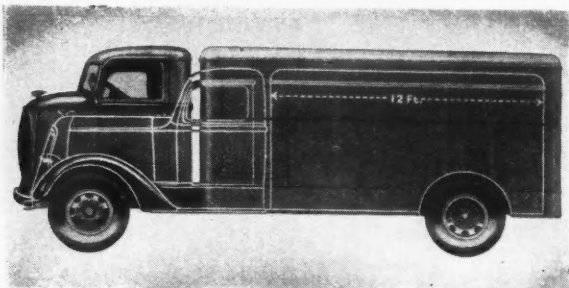
Axle ratio of this $\frac{3}{4}$ -ton stake model is 4.3 to 1. Offered as optional axle ratios are 3.9 to 1 and 4.78 to 1. With the exception of the first and reverse speeds, helical gears are used in the three-speed heavy-duty type transmission. A four-stud power take-off opening is provided on the right side.

Carburetion and fuel feed efficiency in this model are increased by the use of a heat shield for the fuel pump. Gas lines run on the outside of the frame and reduce the possibility of vapor lock. Filler tube of the gas tank is on the outside of the cab.

One and one-half-ton models in wheelbase lengths of 126 $\frac{1}{2}$, 133 and 159 in. are available in 9500 and 11,500 lb. gross weight rating capacities.

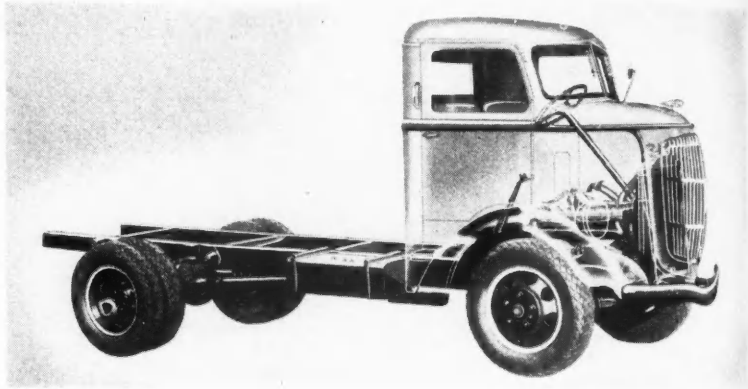
The one and one-half-ton models with 9500 lb. gross rating capacities have an engine with 3 $\frac{3}{8}$ in. x 4 $\frac{1}{16}$ -in. bore and stroke, and with 73 hp. rating. Featured on this truck are the numerous mechanical advantages, such

(TURN TO PAGE 68, PLEASE)



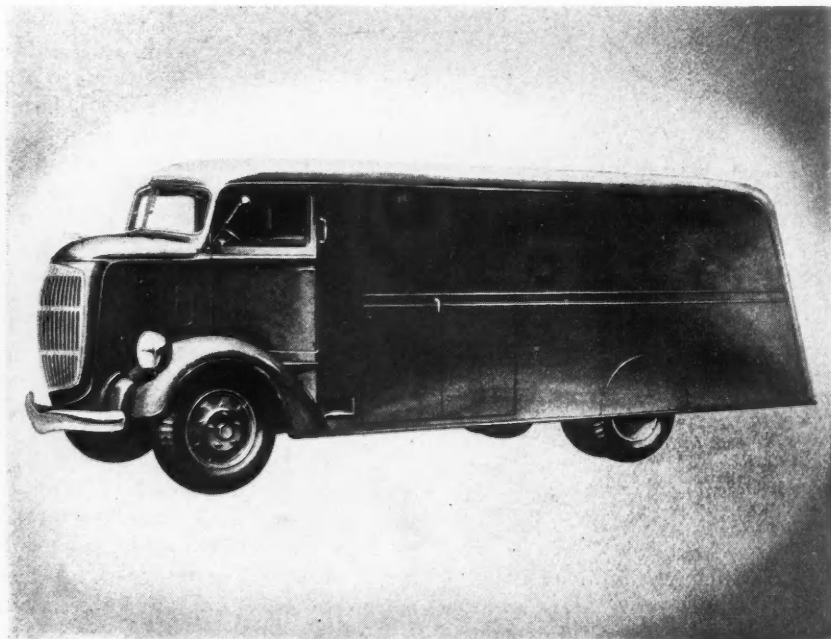
REO

Presents



**Cab-Over-Engine Models in 12,000 and 15,000 Lb.
Capacities and Four Wheelbases from 105 to 166**

Top left: Reo's new cab forward chassis takes a 15 ft. body on the same wheelbase required for a 12 ft. body in conventional practice. Top right: Phantom view of internal arrangement. Below: A typical body installation.

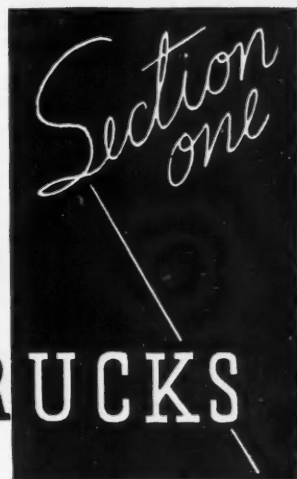
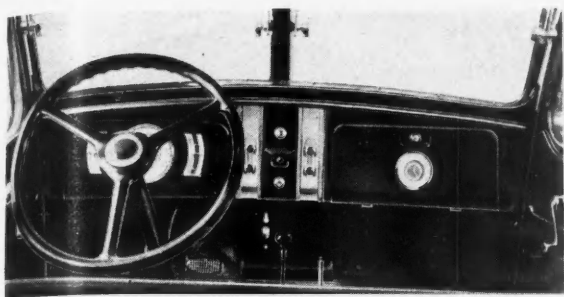


AN entirely new line of cab-over-engine models, in the moderate priced field, now places Reo Motor Car Co. in direct competition for the wider market in this popular type.

In addition to the usual cab-forward advantages of ideal weight distribution, greater load carrying space, shorter overall length and ease of handling in traffic, the new Reo cab-over-engine models feature appearance, accessibility, driver comfort and safety.

With a weight distribution of approximately one-third on the front wheels and two-thirds on the rear, as compared to 20-80 or 25-75 in conventional trucks, Reo uses heavier front axles on its new COE models. Front tread is wider, also, to improve stability and give an unusually short turning radius. Because these units are engineered from the ground up for cab-forward service, Reo engineers claim they have greater mechanical accessibility, providing not only increased dependability, but lower maintenance costs and more uninterrupted hours of profitable operation.

Reo's new cab-over-engine trucks are presented in two capacity ranges and four wheelbases, from 105 in. to 166 in., and are equipped with either a 228 or 268 cu. in. Reo Gold Crown engine. Capacity ratings are 12,000 and 15,000 lb. gross.



FEDERAL TRUCKS

presents

FEATURING new streamlining by Henry Dreyfuss, internationally famous industrial designer, twelve new Federal Truck models are being introduced for 1938 by Federal Motor Truck Co. of Detroit.

The new models, ranging from $\frac{3}{4}$ -ton to 5-ton capacities, round out Federal's 1938 line of twenty-nine models, including conventional and cab-over-engine types, which embrace virtually every commercial transportation need.

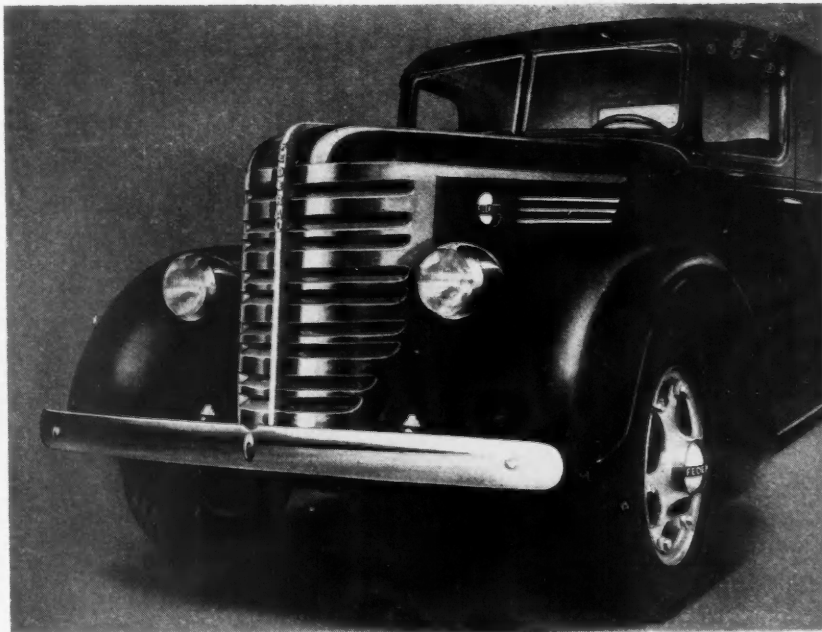
Dreyfuss has created an entirely new type of functional beauty for the 1938 Federals. Front-end appearance of the new trucks is distinguished by a new type radiator grille from which the hood sweeps back to the streamlined cab. The dynamic exterior appearance is enhanced by the liberal use of chromium trim, employed on the hood louvres and windshield frames as well as the radiator grille, lamps and hub caps. A chrome medallion adopted as the new identifying emblem of the new Federal models is mounted on the hood louvres and is repeated in the newly designed hub caps.

Federal's new functional design features two spacious cabs designed for passenger-car comfort, safety and increased driving vision. Dials and gauges have been placed at the left of the handsome new instrument panel in

(TURN TO PAGE 70, PLEASE)

**Dynamic Front-end Styling on 1938 Line Designed
By Dreyfuss Making Liberal Use of Chromium Trim**

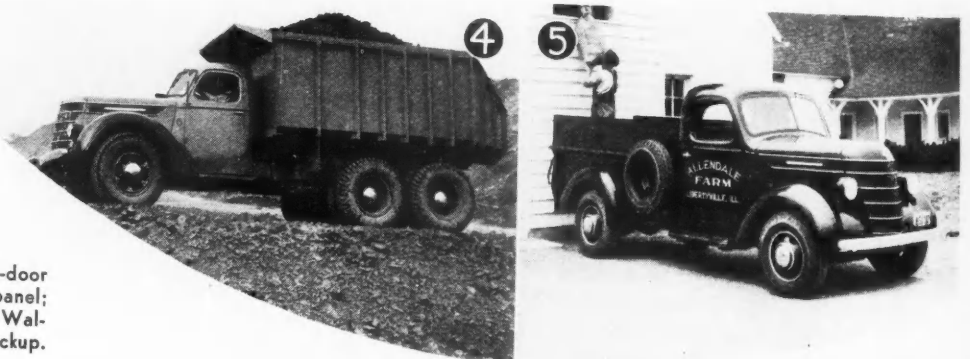
Below: Heavy chrome-trimmed grille, louvres and a special medallion distinguish the front of the new Federals, designed by Henry Dreyfuss. Top: The new instrument panel is practical, features a locked compartment for delivery records.





INTERNATIONAL

Presents



1 to 5 are International's D-5 door-to-door delivery; D-30 cab-over-engine; D-2 panel; D-346-T six-wheeler and D-15 pickup. 6. Walter Snow Fighter. 7. Bantam's 1/4-ton pickup.

Section one

TRUCKS

WALTER

Walter four point positive drive trucks are made in a range of sizes from 85 hp., 2½-3½ ton, up to 7-10 ton, 200 hp. The large models are also available with Diesel motors instead of the gasoline motors.

The main feature of Walter Trucks is that they have a positive drive to all four wheels. This is accomplished through the use of three automatic lock or torque proportioning differentials; there being a front, center and a rear differential. These differentials are of a unique worm and worm gear construction, so that they deliver power to the wheels in proportion to their traction or ability to pull and push. This gives correct differential action to all wheels, right and left, and assures proper driving action at all times.



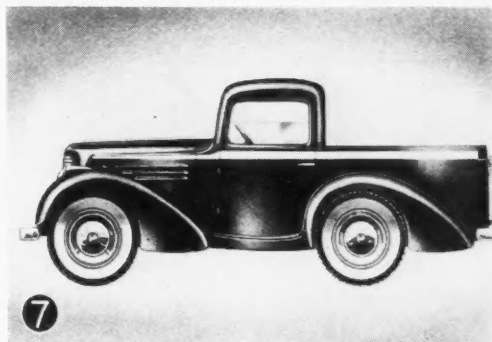
6

BANTAM

American Bantam will have an entirely new line of passenger cars and trucks, with 1938 prices from \$75 to \$125 below any other auto in the lowest price field.

Known as the Bantam "60", the line will be presented by The American Bantam Car Co. which purchased the plant of the former Austin Car Co. here several months ago. Models will include bantam coupes, roadsters and quarter-ton panel and pickup trucks.

Performance claims include the fact that the car will go up to 60 miles per gal. of gasoline, will attain a speed of 60 m.p.h., and can be operated at a cost of less than ¾c per mile for gasoline, oil and tires.



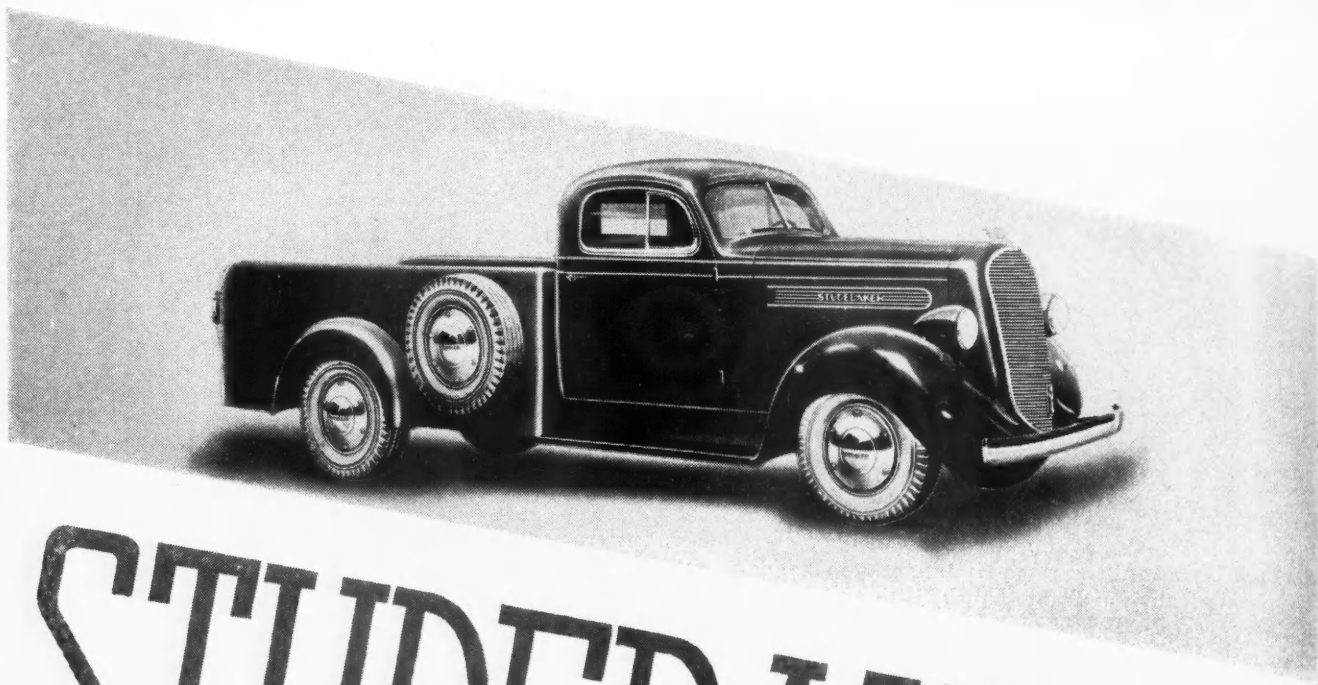
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A Complete Line of Trucks for 1938 Consisting of 24 Models in 73 Wheelbases With Gross Vehicle Weight Ratings Ranging From 4400 to 62,000 Lb.

INTERNATIONAL Harvester's entirely new line of motor trucks announced last spring and augmented through the year with additional chassis includes units ranging in capacity from the half-ton light delivery to the largest six-wheeler. These models include conventional four-wheel trucks, six-wheelers with both dual-drive and trailing rear axles, and cab-over-engine types. The complete International line for 1938 consists of 24 models in 73 wheelbases with gross vehicle weight ratings from 4,400 to 62,000 lb.

Powerful truck engines, numerous wheelbases, a variety of rear axle ratios, two-speed rear axles, and multiple-speed transmissions, especially in the heavy-duty models, permit accurate selection from every standpoint of the right truck for each specific hauling task.

These new Internationals provide universally standardized (S.A.E.) cab-to-rear-axle dimensions so vitally necessary to body interchangeability, and they also permit ready mounting
(TURN TO PAGE 76, PLEASE)

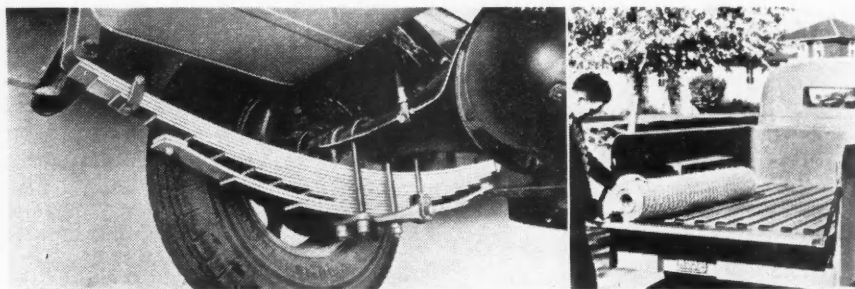


STUDEBAKER

Presents

**Fast-Transport Three-Quarter-Ton Model With Kick-Up
Frame and Passenger Car Comfort and Performance**

Above — View showing lines of the Fast-Transport. Below — Two-stage rear springs are standard. The all-steel body is 8 ft. long, 60 in. wide and 21 in. high; floor 18-gauge



FAST-TRANSPORT, Studebaker's latest achievement in commercial transportation, uniting passenger car comfort and performance with $\frac{3}{4}$ -ton payload, has been announced by The Studebaker Corp., South Bend, Ind.

The Fast-Transport offers a completely new chassis with truck-type kick-up frame, which together with the two-stage underslung rear springs and 16 in. wheels provides both low loading level and unusually high degree of riding comfort.

The engine is a 3-5/16 in. x 4 3/8 in. six cylinder, 226 cu. in. displacement unit. It has a 79 horsepower rating.

The features of the Fast-Transport making for driver comfort and convenience include adjustable seat back, controlled ventilation, rotary door locks, built-in defrosting equipment, sun visors, dome light, twin windshield wipers, ash tray and dash compartment.

Body and cab are all-steel.

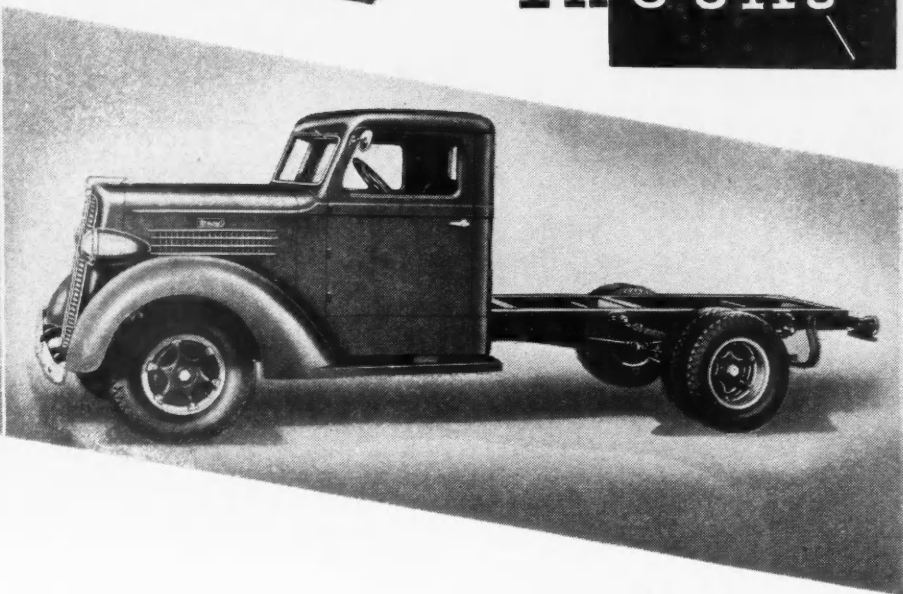
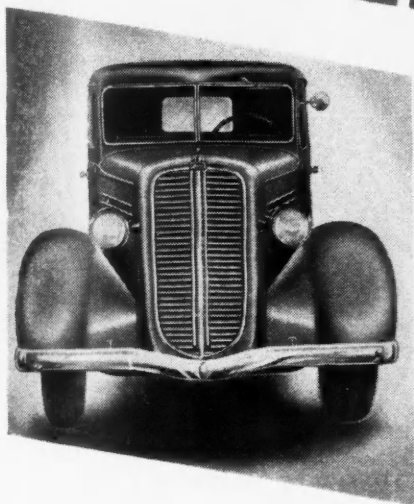
See Specifications Table in this issue for mechanical details.

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

STEWART

TRUCKS

Section one



A NEW truck of 1 to 1½-ton capacity, known as Model 61A, has been announced by the Stewart Motor Corp., Buffalo, N. Y.

This model, while similar in general appearance to the larger Stewart trucks, represents new engineering advancements. Simplicity and good taste have been incorporated in the streamlined styling of this model and an impressively well-balanced appearance has been gained with no sacrifice of accessibility to engine and other chassis parts. Standard wheelbase is 123 in. for 8 ft. bodies; 132 in. optional for 9 ft. bodies. Special wheelbases, 140 in., 145 in. and 163 in., are available at extra cost.

Model 61A is powered by a six-cylinder engine having a bore and stroke of 3¼ in. x 4⅜ in. developing 65 horsepower at 2800 R.P.M. It has a piston displacement of 218 cu. in. and a maximum torque of 155 lb. ft. Engine lubrication is pressure fed, with constant pressure control for all speeds. Zenith downdraft carburetor is equip-

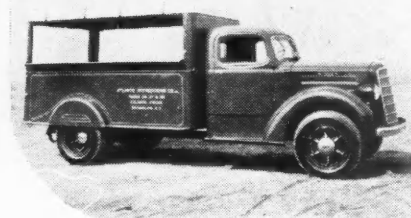
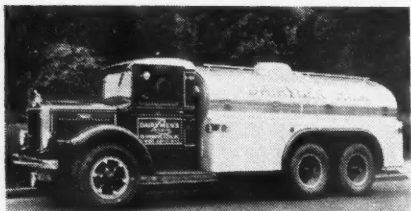
Presents

New 1 to 1½-Ton Model Styled Similar to Its Larger Trucks But Incorporates Engineering Advancements

ped with air cleaner. The unit power plant transmission has four speeds forward and one reverse.

Rear axle is full floating type. Gears are spiral bevel with straddle mounted pinion. A 10-in. dry plate clutch is equipped with vibration dampener. Ross cam and twin lever steering arrangement insures easy steering.

The side rails of the frame are 8½ in. deep at their greatest depth. Heavy crossmembers are hot riveted to side rails, providing a sturdy backbone for the entire chassis. Front springs are 38½ in. long, 2¼ in. wide and have 10 leaves. Rear springs are 50 in. long, 2½ in. wide and have 11 leaves. The ignition system is Delco-Remy.



MACK

Presents

FIRST in the line of new models introduced by Mack Trucks, Inc. this year are the models EM and EQ rated at 20,000 and 23,000 lb. gross respectively. In their modern streamlined styling Mack has carried out the same design introduced last year on the EH, and 18,000 lb. gross model which established a remarkable sales record. The models EM and EQ are offered in four standard wheelbases ranging from 146 in. to 194 in. for the truck, and three wheelbases ranging from 141 in. to 158 in. for the tractor.

Both the EM and EQ are powered by 6-cyl. engines, the EM by an engine

of $3\frac{3}{8}$ in. x 5 in. bore and stroke, developing 79 hp. at governed speed of 2300 r.p.m., and the EQ by an engine of $3\frac{7}{8}$ in. x 5 in. bore and stroke, generating 92 hp. at governed speed of 2300 r.p.m.

In both the EM and the EQ the drive is from a dry single plate clutch through a five speed transmission which is built as a unit with the engine. Direct drive in fifth or an over-geared fifth speed is optional. An additional fast reverse gear is available in both models. On the smaller EM the final drive is of the single reduction spiral (TURN TO PAGE 70, PLEASE)

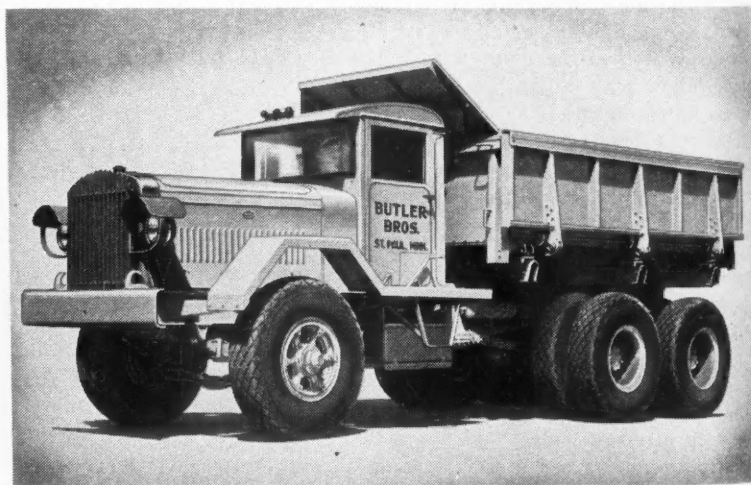
HUG

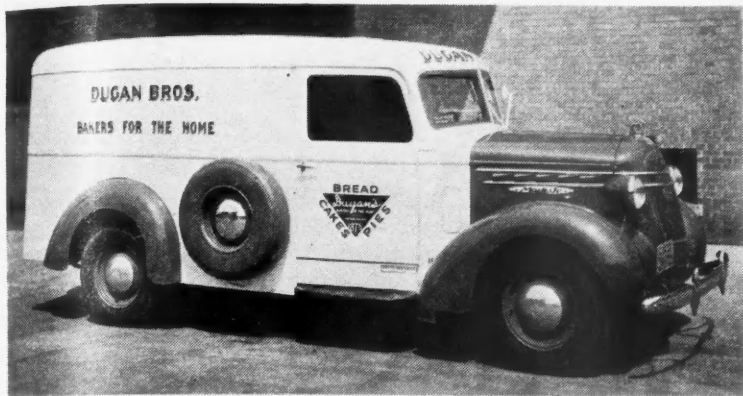
The Hug Co. has announced the addition of the Model 99S to its present line of quarry models. The Model 99S is built along the same lines as the Model 99, which has proven to be a very successful quarry unit.

The 99S is available with gas or Diesel power, has a maximum payload capacity of 40,000 to 44,000 lb. and is designed to handle power hoist bodies up to 12 yd. capacities.

The standard engine is the Buda GF-638 gas engine with the Cummins HB-6 Diesel offered as optional equipment. Transmissions include a 4-speed unit and 3-speed auxiliary, giving a total of 12 speeds forward and 3 reverse.

Hug's new quarry model has a double reduction dual-drive type rear axle with equalizing beams and torque rods to properly distribute the load over both axles





**For 1938 a Complete Line of Conventional and
COE Jobs, Including Mack Jrs. From 1/2-Ton Up**



Sterling's new dump model for mine stripping work has four-wheel air brakes standard; main and auxiliary rear springs have a carrying capacity of 52,000 lb.



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Section one TRUCKS

The Dugan job, above left, is a Mack Jr. model 2M, while the streamline Hanscom truck is a Mack EC Traffic Type. On the opposite page, down the column, are Mack BX six-wheeler, 31M Mack Jr., AC-4 for materials delivery and model EJ.

STERLING

Augmenting its present line of heavy-duty motor trucks, the Sterling Motor Truck Co., Inc., has developed an exceptionally large dump truck which is particularly adapted to mine stripping operations. Known as Model HC250, it is the largest four-wheel truck built to date. Ordinarily, it is equipped with a heavily constructed dump body of 12 cu. yd. water level capacity which permits hauling payloads of 18 to 20 tons, resulting in a gross weight of approximately 60,000 lb.

It is powered with either a 677 cu. in. gasoline engine or a 672 cu. in. Diesel engine. Dual transmissions provide 12 forward speeds and three reverse. Final drive is by means of heavy duty 2 in. pitch sprockets and chains. An exceptionally large solid round axle with over capacity wheel bearings and 13.50/24 dual tires permits the carrying of these large loads over rough terrain.

The frame side-members are formed of $\frac{3}{8}$ in. thick alloy steel and heat-treated. The channels are 12 in. deep the entire length and lined with $1\frac{5}{8}$ in. thick seasoned white oak. All frame cross-members are heavily gusseted and securely bolted in place.

The standard wheelbase for dump chassis is 177 in. and this is suitable for a body 12 ft. long.



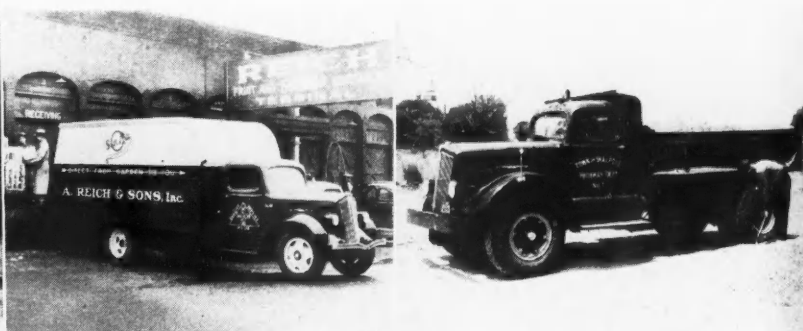
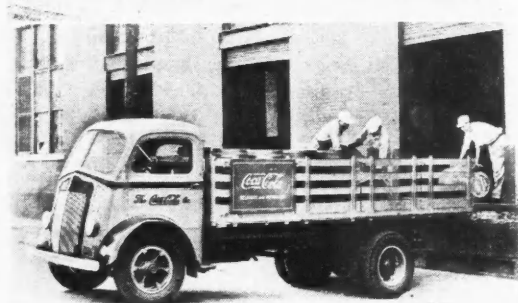
WHITE

Presents

Complete Line of Trucks and Tractors for Every Type of Operation

A CONSTANT and thorough study of field and operating conditions, anticipated loads, truck construction materials and processes by competent, progressive engineers has made it possible for The White Motor Co. today to offer a complete line of trucks and tractors—a model for every conceivable type of work, practically custom-built for the operator.

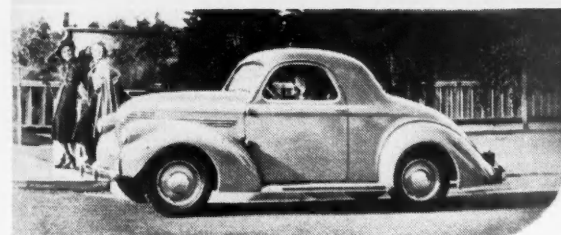
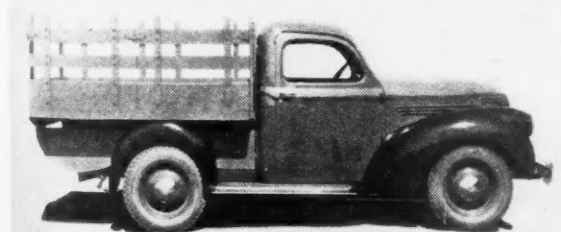
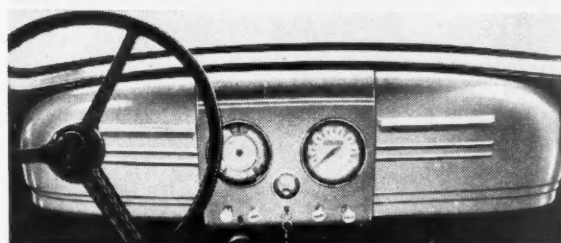
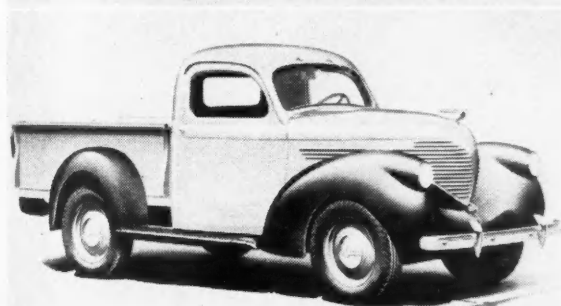
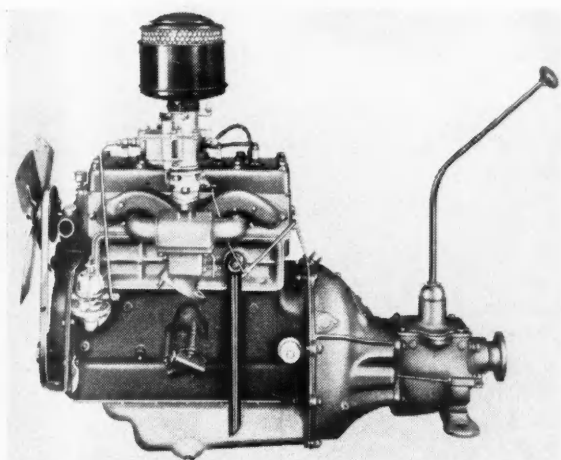
Ever alert to customer-demands and the trends of the industry as a whole, White recently introduced the Model 700, first quality truck in the low-price field and the lowest-priced unit ever marketed by the company. This model was introduced after months of testing for truck operators in that particular price range.



Rated in the 1-1/2 ton field, the Model 700 has a standard wheelbase of 136 in., optional wheelbases up to 196 in. Built upon a sturdy pressed steel frame, the unit is powered by an economical White six-cylinder engine of 250 cu. in. displacement, with a counterweighted, heat-treated seven bearing steel crankshaft, and a four-speed transmission, fourth direct. Streamlined and distinctively styled by Count Alexis de Sakhnoffsky, industrial designer, the model has been enthusiastically—
(TURN TO PAGE 64. PLEASE)

Beginning at top left the White trucks illustrated in varied applications are: Model 942 six-wheeler, model 805, model 809, model 918 six-wheeler, model 700, and model 722.

Down the column: Willys 4-cylinder engine has 134 cu. in. displacement and a torque of 100 lb. ft. at 1400 to 1900 r.p.m. Pick-up body is available in both economy and 1/2-ton models. The instrument panel. The stake body is entirely new. Coupes in three models, economy, standard and de luxe.



Section one

TRUCKS

WILLYS

presents

A Line of Commercial Models and Plans to Introduce Door-to-Door Unit Very Shortly

WILLYS-OVERLAND MOTORS, INC., makes its bow in the commercial field with a new line of commercial units. The price leader is the Willys Economy Cab Pick-up of 750-lb. capacity which carries a price of \$480 without including the cost of equipment. A standard package, including all items of needed equipment, will be available at very low cost, probably holding delivered price, complete, under \$500.

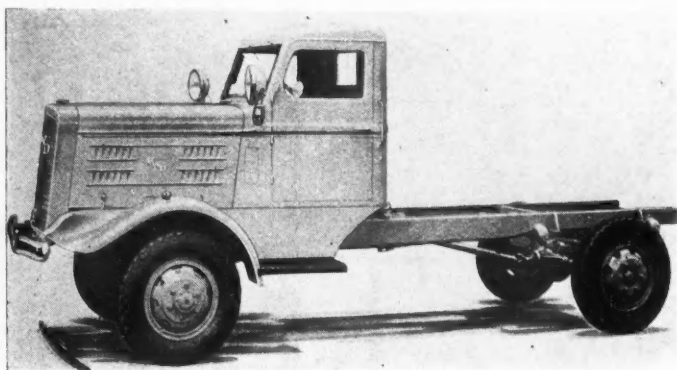
The regular commercial line, to be known as the Willys Half-Tonner, comprises the following models and prices:

Chassis, stripped	\$330
Chassis, with cowl	400
Chassis, with cab	490
Half-tonner Pick-up (complete)	530

In addition, plans are underway for the introduction, by the turn of the year, of a unique vocational door-to-door unit on the half-tonner chassis.

From a mechanical viewpoint, the Economy model is built on the standard passenger car chassis using standard units through-

(TURN TO PAGE 66, PLEASE)



F.W.D.

Four Wheel Drive Auto Co., of Clintonville, Wis., has announced the model HG, a four-wheel drive truck designed especially for highway maintenance.

Attractively streamlined within the bounds of practicability, the new unit is of rugged construction, and built to withstand grueling operating conditions. In this unit the patented FWD transfer case has been built so that a clearance of 23 in. under the driving mechanism permits the installation of an underbody scraper, or other equipment.

Speed in high gear, with engine governed at 2500 r.p.m., and standard tires, can reach 37.4 m.p.h. Five speeds forward,

and one reverse, are standard.

The unit has a rated capacity of 2 tons, and a gross rating of 16,000 lb. Chassis weight (dry weight) is 6530 lb., cab included. A wheelbase of 156 in. is standard. With bore and stroke of $4\frac{1}{8}$ in. x $4\frac{1}{4}$ in., and a displacement of 381 cu. in., the 6-cylinder Waukesha 6-MK engine develops 85 h.p. at 2500 r.p.m., and has a torque of 256 lb. ft.

The center differential is of the design exclusive with FWD trucks.

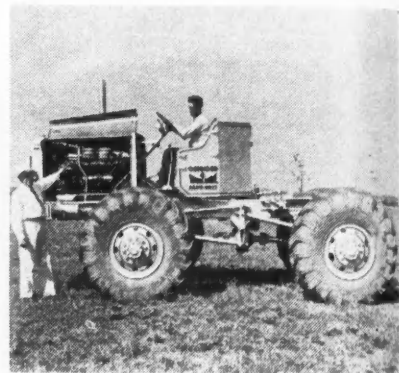
Brakes are four-wheel hydraulic, operated by a vacuum booster, and an external parking brake operating on the transmission.

Tires are 7.50 x 20 in., with singles

mounted on front wheels, and duals, rear.

Finished in an attractive combination of chrome, orange, and black, the new maintenance models may be secured in other colors.

Left—FWD's new highway maintenance model. Below, top to bottom—Oshkosh "earth-mover", Oshkosh JDS with St. Paul grader, Walker Electric model with dump and Walker model 400



OSHKOSH

The line of Oshkosh trucks for 1938 consists of 12 models, all four-wheel drives. The smallest truck in the line is the model JCB, a 2-ton truck having a Hercules engine of 282 cu. in. of piston displacement. The largest truck is the GD36, a 10-12-ton truck which is powered by the HXE Hercules engine. This engine has a bore of $5\frac{3}{4}$ in. and a stroke of 6 in., resulting in 935 cu. in. of piston displacement. This engine

develops 199 h.p. at 2000 r.p.m. and 610 ft. lb. of torque. The Earth Mover illustrated is equipped with 18.00/24 tires and a 176 h.p. diesel engine. It is possible to obtain most models powered with Diesel engines. The four-wheel drive makes the Oshkosh trucks especially adapted to snow plow and grading work as well as any work in which the truck must leave good highways.

WALKER

The new 400 series of Walker electric trucks built by the Walker Vehicle Co., 101 West 87th St., Chicago, Ill., is a new line of light duty trucks designed especially for a wide variety of delivery service. The model 400-LA is a 36 case low-aisle milk truck equipped with a slow-speed high-torque motor. Model 405, is a $\frac{3}{4}$ -1 ton straight frame truck equipped with a high-speed high-torque motor. Model 400-LA has a normal speed of 15 m.p.h. and the 405 a speed

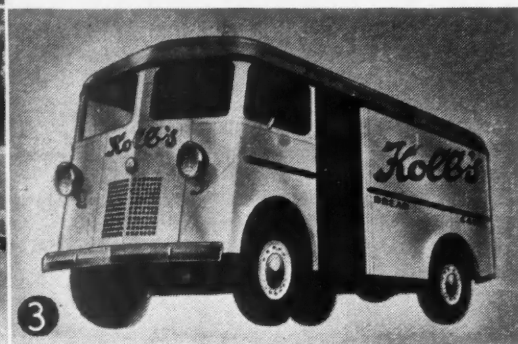
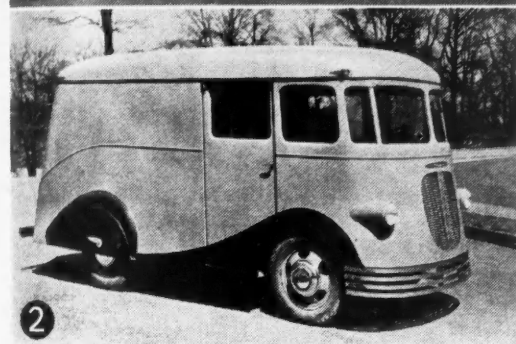
of 20 m.p.h. Any variation of these two models is possible. Model 420 is a $1\frac{1}{2}$ -2 ton capacity straight frame chassis with dual rear tires similar in design to model 405 but with all parts designed to accommodate the increased load.

The outstanding features of Walker construction are: High gear ratio permitting the use of high speed motors, full floating drive shafts and pinions, spur gears and lack of thrust strains.

1. METRO conversion bodies may be applied to any standard 1/2- or 3/4-ton chassis without alteration to engine, transmission, drive shaft or rear end. Metropolitan Body Co., Bridgeport, Pa., is the maker. Load capacity about 250 cu. ft. 2. Just announced is the White Model 800 MERCHANDOR with chassis and body engineered as a complete unit. Capacity is 350 cu. ft. 3. The FULTON door-to-door delivery has a 100 in. wheelbase, Waukesha 133 cu. in. engine and a load capacity of 191 cu. ft. 4. Transportation Engineers, Inc., Detroit, Mich., has a new DEARBORN LINE conversion body for the standard 112-in. Ford chassis. No major alterations are required. Capacity of this model is 334 cu. ft. 5. A new MACK JR. model known as the Route Delivery

Section
one

T RUCKS

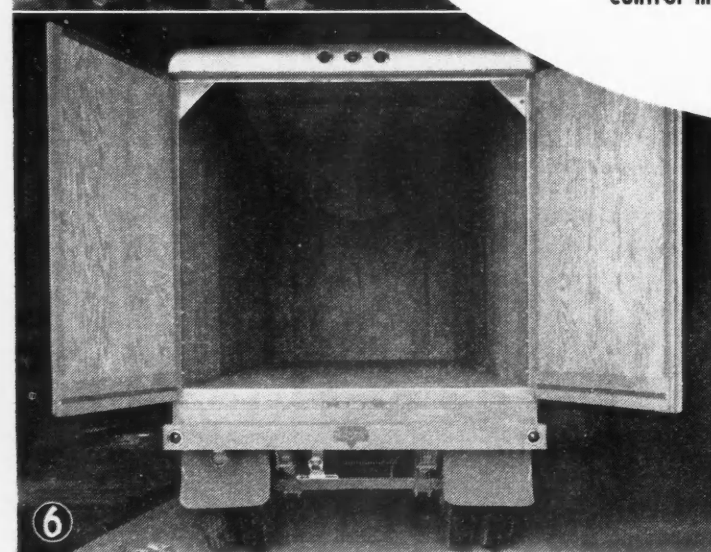
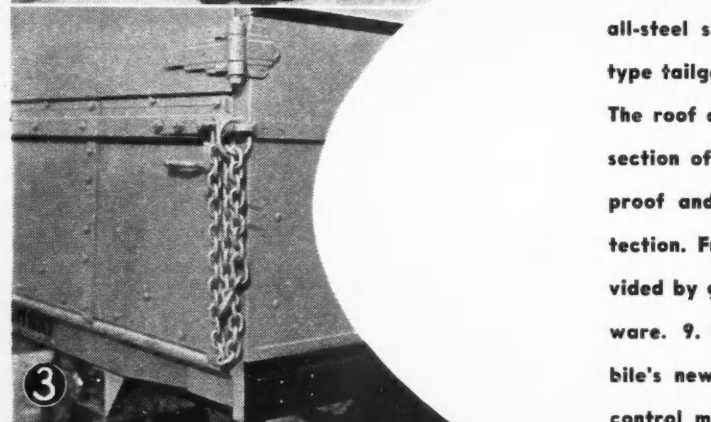
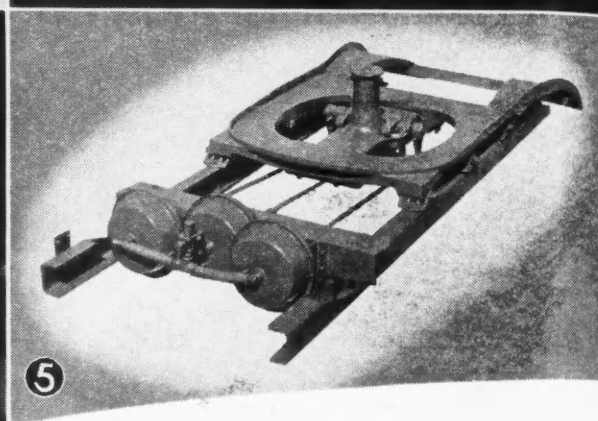
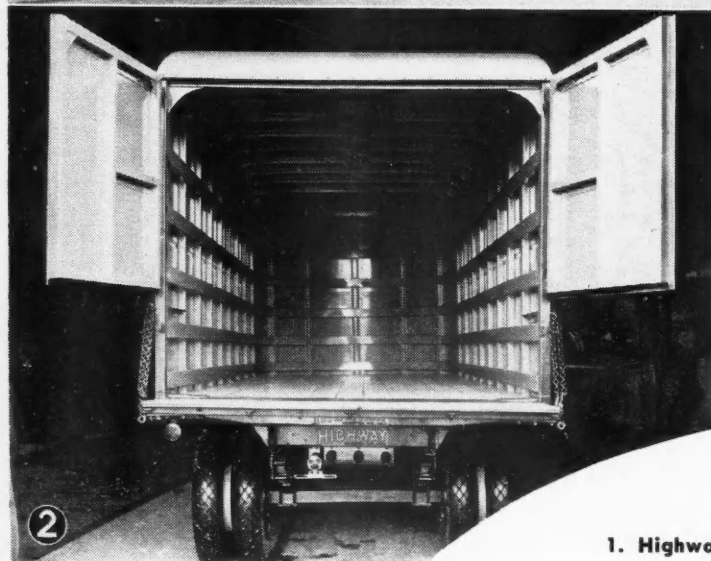
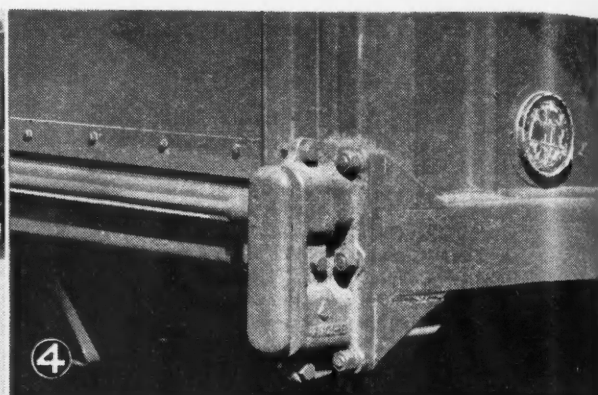
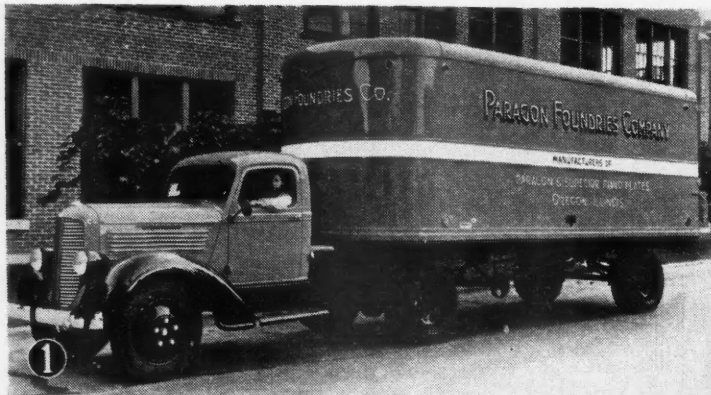


To meet the demand for specialized retail delivery units, a number of truck manufacturers have been turning their attention to the development of special jobs, many of them mounted on redesigned chassis. Maximum load capacity, accessibility of the driver's compartment to provide ready entry from either side, easily-reached load compartments, and good visibility are characteristics of the new bodies. In the chassis particular attention is being paid to low operating costs, adequate size of clutch and rear end and high-capacity electrical systems. A few representative models are illustrated on this page.

TRUCK

CONVERSIONS





1. Highway's new Freightmaster. 2. Interior of the Freightmaster, all-steel sides and roof. 3. Tailgate of the same unit with tubular type tailgate hinge. 6, 7 and 8. Views of Highway's new Roadmaster. The roof carries a one-piece metal roof crown with insulated center section of canvas. The rear-end enclosure is weatherproof and rust-proof and the full length all-steel bumper provides complete protection. Full width opening is a feature and positive sealing is provided by gimp under constant pressure of theftproof type door hardware. 9. Kingham's all-steel, die-formed sectional body. 4. Trailmobile's new rubber bumper. 5. New type of fifth wheel with power control made by Trailer Co. of America for the Lapeer automatics

HIGHWAY TRAILER CO. has announced two new standard trailer models. These have been developed as a result of a conviction that a single standard job cannot possibly fulfill all requirements of average hauling, but that two will do so.

For the transportation of dry freight of every kind, Highway provides the Freightmaster. And for handling commodities which of necessity require adequate protection against heat, cold, dust and theft, it has developed the Roadmaster.

The Freightmaster is built along lines of "Clipper Ship" construction. That is, a sheet metal enclosure and pressed metal framework riveted into one structurally coordinated unit of great strength, yet light in weight. Everything is of formed metal except the floor boards.

The Freightmaster tops are built up entirely independent of the body on new type, modernized fabrication fix-

tures. Three styles of top are furnished: an all-steel flat top, a steel streamlined top, and an open top with removable bows and a new integral type knee brace without bolts, pins or chains for the rear bow that holds the rear corners as rigid as non-removable construction. A wear-proof tarpaulin is standard equipment on the open top models.

A unique feature of the tailgate assembly is a tubular type continuous tailgate hinge with no open spaces or obstructions for hand-truck wheels. The entire rear end assembly is simple, yet strong and completely weatherproof.

The Freightmaster is available in three standard lengths and two standard heights.

Designed for maximum load protection, the Roadmaster gives protection against extremes of temperature and against dust and theft. It allows a great many variations from standard. It is made with standard foundation type

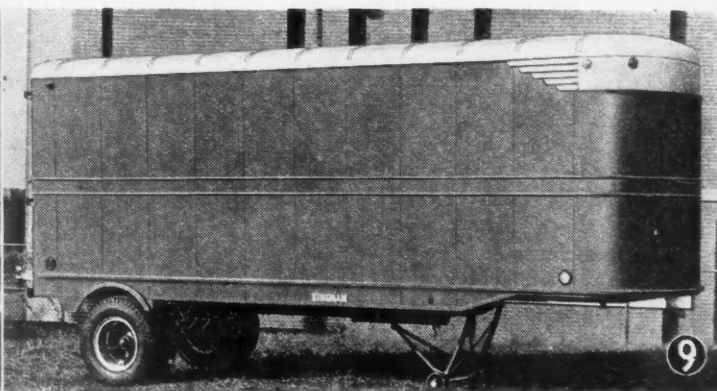
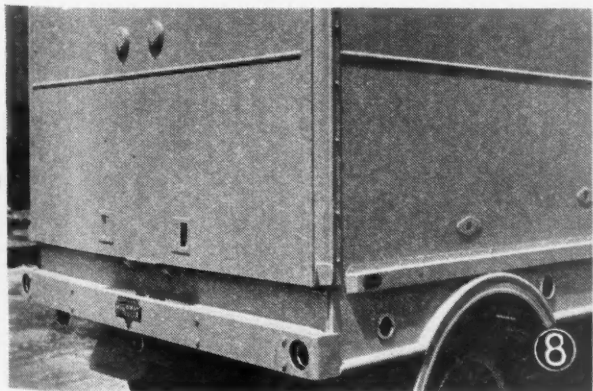
*Section
Two*

TRAILERS

skirting, with medium depth skirting or without skirting and fenders; with straight frame or drop frame, with conventional or streamlined top with or without wind splitter front. Full insulation can be built in easily.

(TURN TO PAGE 82. PLEASE)

TRAILERS

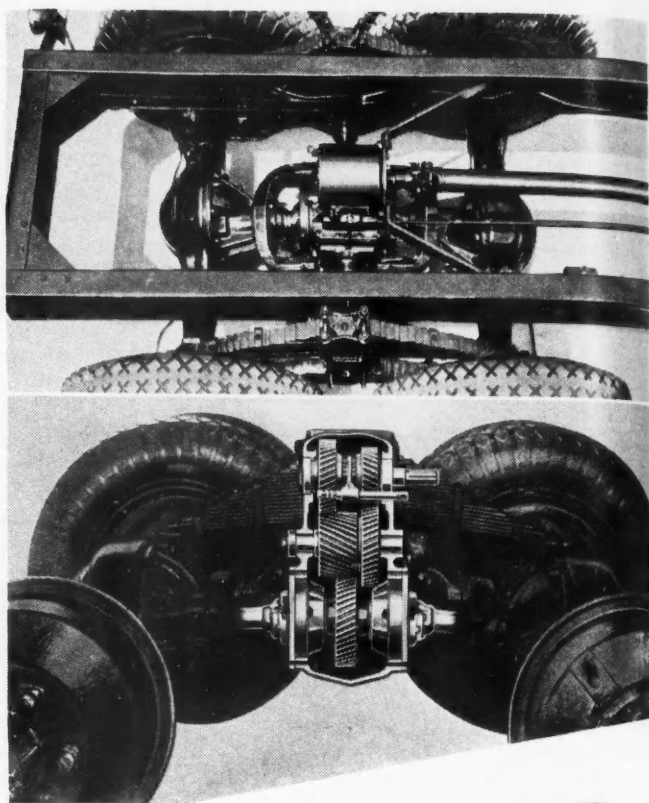


COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

SUPPLEMENTING its present four-rear-wheel drive transmission unit for standard 1½-ton trucks, Thornton Tandem Co., Detroit, announces the "Big Bogie," a unit engineered for operation with heavy-duty axles, permitting coverage of the entire range of light truck chassis up to 3-ton rating. Previous to the introduction of this larger unit, Thornton AF and AC models, engineered for use with two standard rear axles, have met all requirements for hauling gross capacities up to 26,000 lb.

With the use of heavy-duty rear ends instead of standard axles, the gross capacities of trucks of 1½-ton rating can be increased to 30,000 lb., and with trailers the new Thornton "Big Bogie" will handle from 40,000 to 50,000 lb.

The Thornton dual transmission is mounted between two rear axles, supplying equal tractive power to all four wheels, with eight forward speeds. (four power ranges for hard pulls and four speed ranges for long, fast hauls), and two reverse. Frames are reinforced and walking-beam springs substituted.



THIRD AXLES

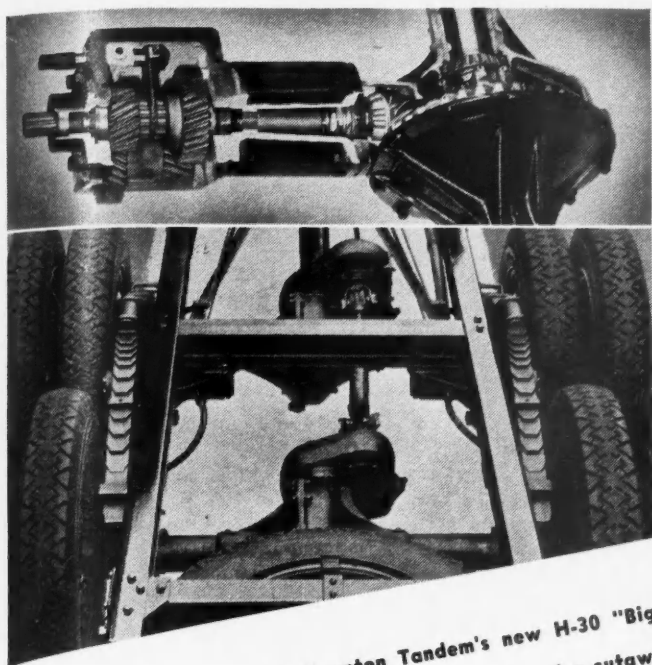
THE amidships transmission, built by The Warford Corp., New York City, for use in connection with Warford multi-wheel transportation units, is now coming through with helical gears, which make for quieter operation. The spur gear amidships job is retained.

The new Warford dual ratio axle unit for the Ford truck will soon be available for the Chevrolet truck. This unit has eight speeds forward and two reverse, with a choice of three dual ratios to meet any specific operation. This unit is available for mounting on a standard Ford axle or in connection with the dual drive Warford multi-wheeler.

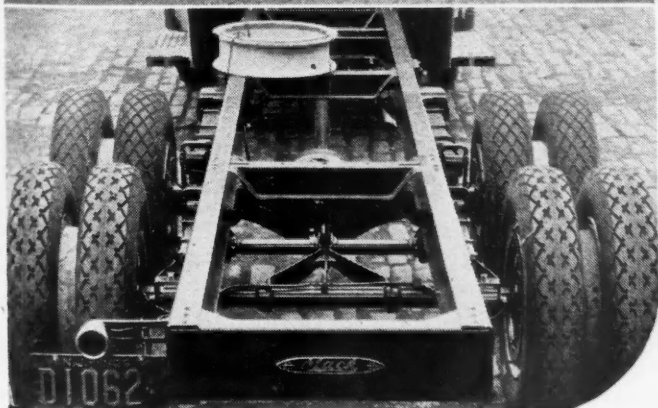
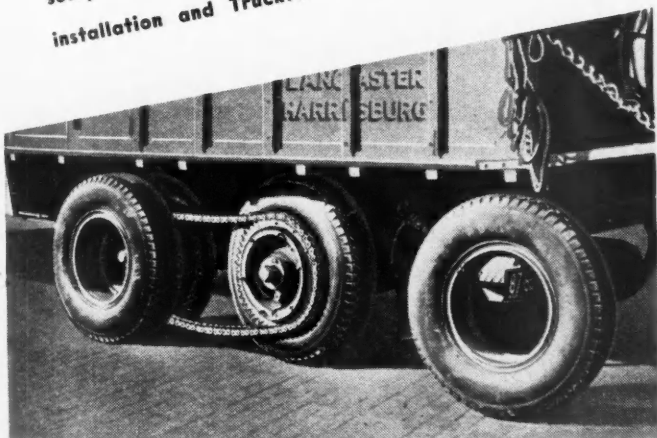


Section three

THIRD AXLES



Top, left . . . Two views of Thornton Tandem's new H-30 "Big Bogie," showing a birds-eye view of the rear arrangement and a cutaway of the transmission case with dual ratio gears. The unit includes walking beam spring action affording traction on all four wheels at all times . . . Below, left . . . A GMC F33 equipped with a Model 25 Truxmore unit and an 18-ft. body to haul a 10-ton load. Under it a view of the Truxmore third-axle layout . . . Above . . . Warford's dual ratio axle unit mounted on a standard Ford axle and a look at Warford's dual drive setup from above . . . Below . . . Trucktor's four-wheel chain drive installation and Trucktor HLL third-axle unit on a Model EH Mack



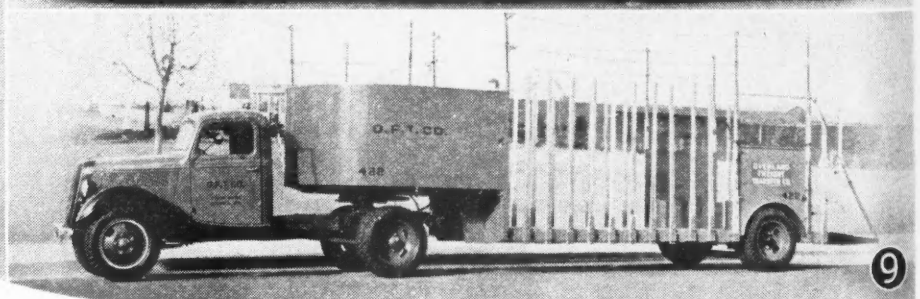
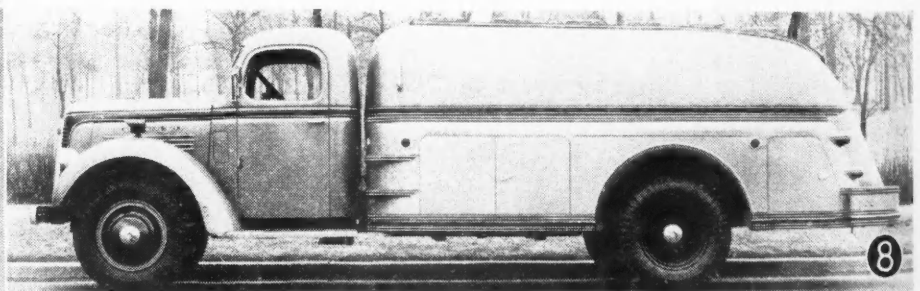
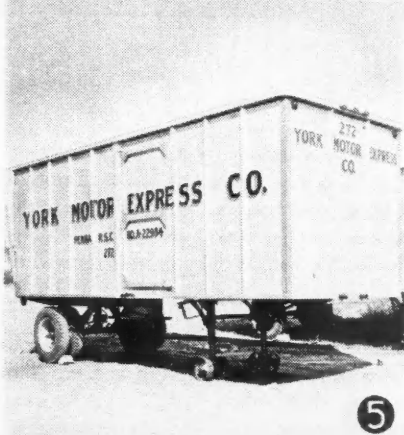
AN exclusive feature of Trucktor third axles, made by The Trucktor Corp., Newark, N. J., is the patented chain and sprocket four-wheel drive. It is the only detachable four-wheel drive device of its kind. One of its advantages is that it can be detached or attached in a few minutes and need be used only when the going is bad. This means that when traction is normal the wheels of the six-wheel attachment can operate as idlers.

The special roller chain used has a 1½-in. pitch and an ultimate tensile strength of 32500 lb. Four special sprockets are provided and, in the case of Budd wheel equipment, the required number of Budd extension nuts is provided. Chains are equipped with special connecting links and in operation are run quite slack so that they may be connected or detached easily without removing the tires.

THE Truxmore third axle, made by Truck Equipment Co., Buffalo, N. Y., is a walking beam and cross shaft type. The forward ends of the beams are attached to the rear end of conventional truck springs by means of long shackles. The rear ends of the beams connect to the axle by means of bearings that provide oscillation and slippage.

A crank cross shaft is employed to which the beams are attached. The weight carried on the cross shaft tends to turn the crank to a vertical position, but this turning is flexibly controlled by coil springs attached to chains and sheaves on the crank.

In addition to this type, there are several exclusive patented features used: Manually operated load shifter, convenient in extremely slippery weather; gravity springs, providing a better ride and stability; flexible leaf spring cross member and self-aligning bearings, reducing frame and bracket stresses.



BODIES AND

Light weight, good appearance and functional design are chief features of the modern body. Examples here described are supplemented by many more on page 182



Section four BODIES & BODY EQUIPMENT

1. Three hundred twenty-five gal. of ice cream and 400 lb. of butter are carried in this McFarlane and Co. body protected by 6 in. of Dry-Zexo insulation on top, sides and ends and 6 in. of cork layer on the floor.

2. Flyproof garbage collection body by Gar Wood Industries on a Dodge 2-ton chassis. A single lever operates the loading bucket which travels to the top and dumps into the hopper. A hydraulic hoist dumps the body.

3. A very high tipper, 82 deg. to be exact. Body and hoist by Anthony and chassis by Dodge. This covered body with scow end was used to move glass from the mixing bins to furnace when conveyors were dismantled.

4. This is one of a fleet of eight Federal dump trucks equipped with heavy-duty model 82 St. Paul Hi-Dumper hoists and special rack bodies and cab shields. They are used in clean up work on the Fort Peck dam project.

5. This trailer used by the York Motor Express is made of aluminum and of monocoque design. The purpose of the metal and the construction is to save weight, which it does, the exact amount depending upon the design.

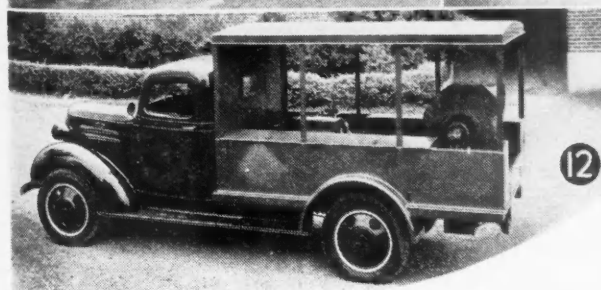
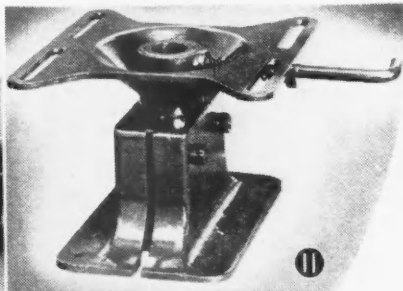
6. The sides and doors of these step-in and drive it trucks are made of Plymetl supplied by the Haskelite Mfg. Corp. Mounted on a short wheelbase electric chassis, there is a surprising amount of usable space.

B O D Y E Q U I P M E N T

7. This refrigerator body built by Luce Mfg. Co. uses Hansen hardware. The lock is the No. 70-D refrigerator lock and the six hinges in sight are Hansen's No. 15 hinges. Both are latest type of equipment available.

8. Heil streamline tank unit with two 200-gal. compartments and four 150-gal. compartments. Equipped with streamline manholes, 8 in. fillers and Heil vents. It is mounted on a 1937 G.M.C. T-46 chassis.

9. The frame of this trailer is built of United States Steel Man-Ten, 50 per cent stronger than mild steel of the same weight. Weight in this instance was reduced 2 tons in a trailer with a carrying capacity of 15 tons.



10. New York-Hoover series 2000 all steel step-in body. Built in three and four case lengths, can be mounted on practically any chassis and has standard replacement parts. It has new tilting seat and sliding doors.

11. Three-in. front and back adjustment, 1 1/2-in. up and down adjustment as well as complete swivel action are provided by this new Eberhard driver's seat pedestal. Can be easily locked in the fixed position.

12. This Hercules Body equipped truck operates a blower for cooling manholes and a 300 amp. generator for an electric welder and battery of lights. The blower and generator can be operated separately or simultaneously.

SAFETY EQUIPMENT

FOR THE TRUCK AND THE SHOP

INCREASING interest in safety equipment has been displayed in recent years through earnest effort on the part of manufacturers and operators to reduce the nation's accident toll. This year, and particularly in the fleet field, still further interest has been created by regulations of the I.C.C. and many state governing bodies which require specific items contributing to safety on all trucks operating within their jurisdiction.

The result has been a startling increase in new developments along the safety line, while other manufacturers have hastened to improve their lines and make sure that their equipment comes within the specified terms. Many of the newer developments are described in this section.

1. McCloskey Torch

A line of heavy duty highway torches featuring "bomb-shell casings" is being offered by the McCloskey Torch Co., 1215 W. Bancroft St., Toledo, Ohio. A cast iron counter-weight keeps the torch upright regardless of conditions, and the heavy construction renders it virtually impervious to damage. Approved by the Underwriters Laboratories and all state regulations. A special kit containing three flares, three fuses and two flags comes complete in a metal case.

2. Dietz Fog & Driving Lights

Two new lines of fog and driving lights have been introduced recently by

the R. E. Dietz Co., 60 Laight St., New York. Illustrated is the standard high quality line, identified as models 509 and 609, featuring the angle type mounting bracket for added protection. There is also a complete line of lower-priced models.

The Dietz company has also announced a new safety kit, known as No. 340, designed to conform with I.C.C. requirements. It includes three flares, three fuzes, two flags and the necessary holders.

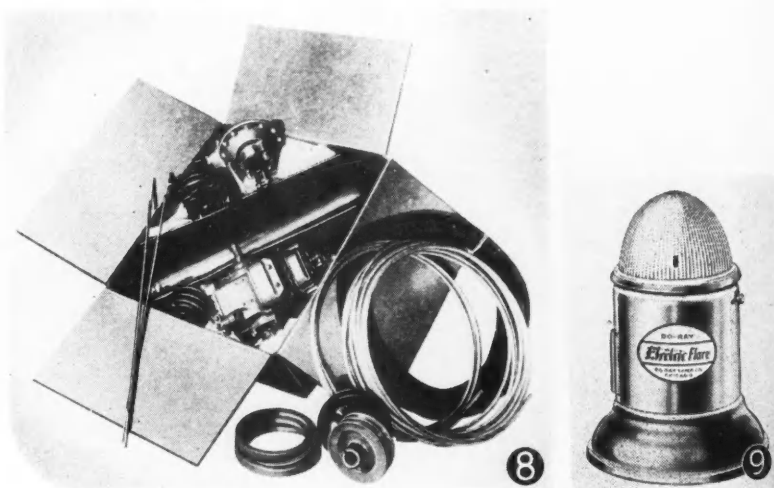
3. Bear Wheel Balancer

The Bear tru-centric wheel balancer

is especially designed for heavy duty truck wheels. The new model has a free-floating head adjustable to any angle. Balance wheels with any variation of camber. Bear Mfg. Co., Rock Island, Ill., is the maker.

4. Weaver Tester

A new de luxe model Weaver tester measures braking energy during an actual stop and wheel alignment of the rolling vehicle. The unit is of the roll-on type and built to carry 30,000 lb. per axle, and to measure braking energy up to 8000 lb. per wheel. A mechanically produced permanent rec-



Section Five

SAFETY

TRUCK & SHOP EQUIPMENT

ord of each vehicle is an additional feature. The maker is Weaver Mfg. Co., Springfield, Ill.

5. New Pyrene Extinguishers

Pyrene Mfg. Co., 560 Belmont Ave., Newark, N. J., offers a complete line of fire fighting equipment to meet all automotive needs. The heavy vehicle type Pyrene conforms to all I.C.C. regulations, is approved by the Underwriter's Laboratories and is furnished with either wall-type bracket or a special new steering column mount. The company also has announced two new 2½ gal. extinguishers of the self-energizing type, known as Wintergarde and Hydrogarde using anti-freeze and pure water respectively as fluid, and a carbon dioxide gas cartridge for power.

6. McKay Heavy-Duty Fan

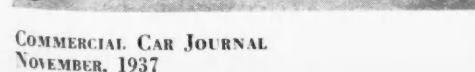
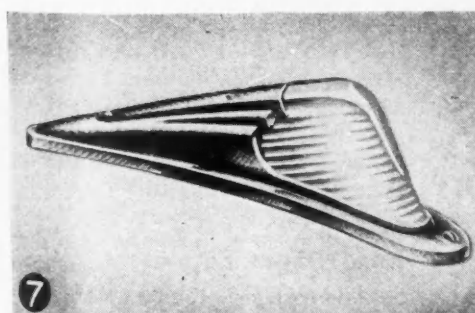
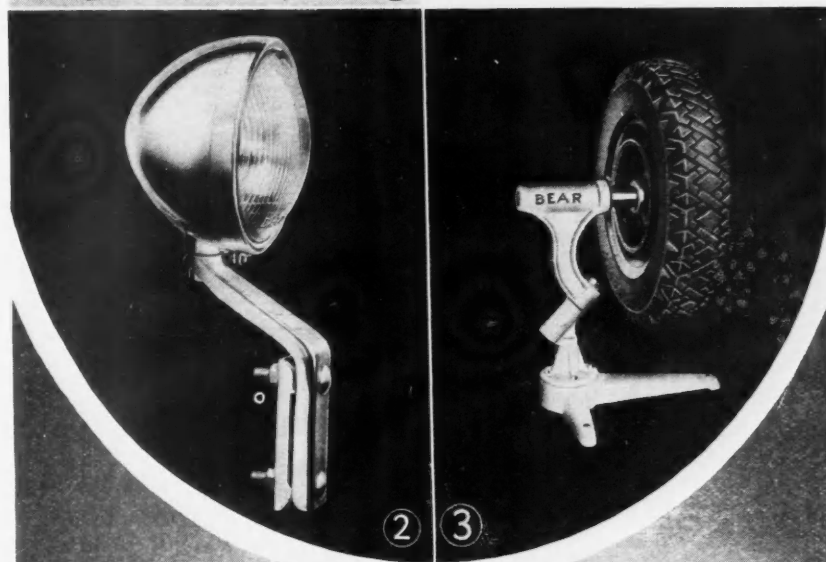
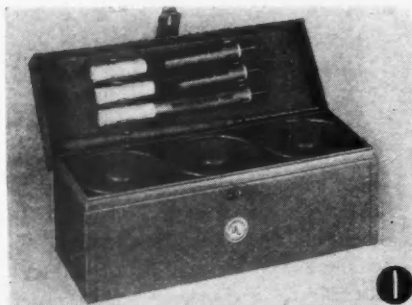
A new heavy-duty McKay fan for truck and bus duty is offered by Lydon-Bricher Mfg. Co. Available in 12-volt capacity, the unit draws 2.1 amp. and delivers 905 cu.ft. per minute.

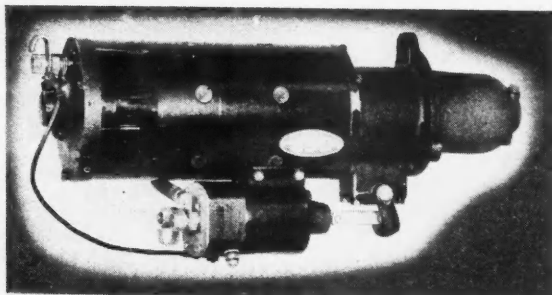
7. K-D Marker Lamps

Two new marker and clearance lamps designed to be mounted on body corners to serve a dual purpose have been introduced by the K-D Lamp Co., Cincinnati, Ohio. The streamline model
(TURN TO PAGE 116, PLEASE)

1. McKloskey safety flare kit. 2. Dietz fog or driving light. 3. Bear heavy-duty wheel balancer. 4. Weaver brake and alignment tester. 5. Pyrene extinguisher. 6. McKay heavy-duty fan. 7. Dietz combination marker and clearance lamp. 8. Bendix-Westinghouse air control kit. 9. Do-Ray electric flare

See article for further details





HERCULES MOTORS CORP., Canton, Ohio, is producing a new series of four cylinder Diesel engines. The new series is known as the DOO series, and consists of two sizes of engines. The DOOC is a 4 in. bore by 5 in. stroke giving a cu. in. piston displacement of 226.2. The engine develops 65 h.p. at 2600 r.p.m. and 155 lb. ft. torque at 1500 r.p.m.

The DOOB engine has a bore of $3\frac{3}{4}$ in. and a $4\frac{1}{2}$ in. stroke. It develops 136 lb. ft. torque at 1500 r.p.m. and 57 h.p. at 2600 r.p.m. The piston displacement is 198.8 cu. in.

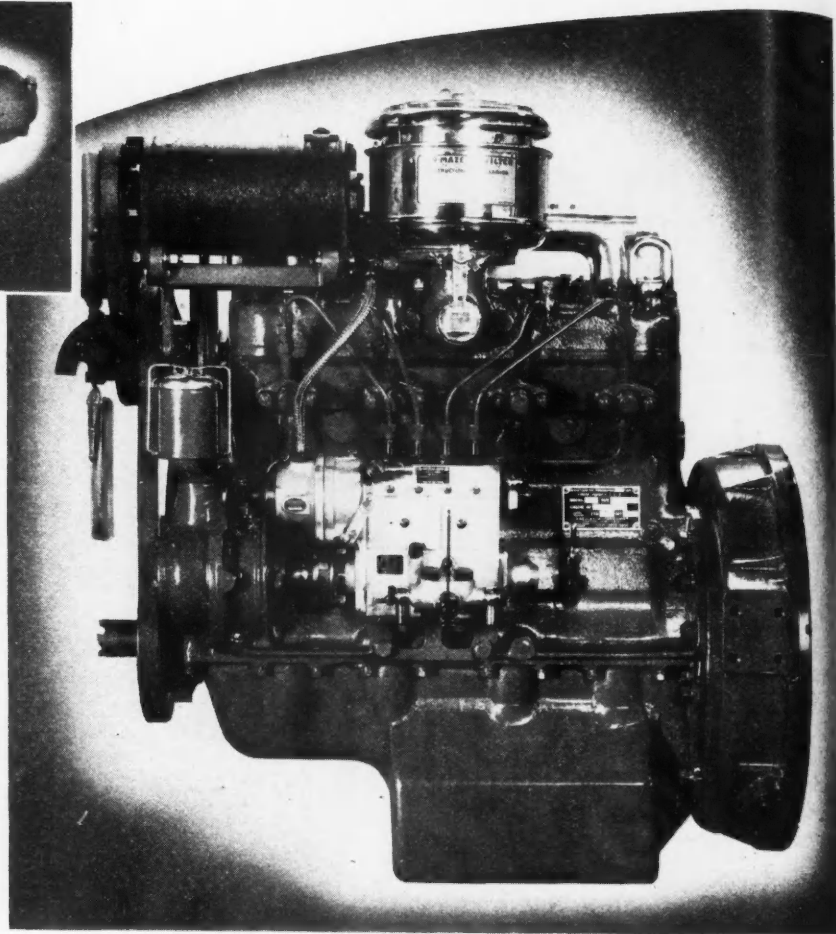
The cylinders on both are cast in four and are integral with the crankcase. The material is electric furnace molybdenum alloy cylinder iron. A one-piece detachable cylinder head is used and it carries overhead valves and rocker arm assemblies. The lubrication is by force to all connecting rod bearings, piston pins and rocker arm bearings.

A special steel crankshaft has electric surface hardened bearings and is supported by five main bearings 3 in. in diameter. The camshaft is driven by helical gears and has four bearings. The connecting rods are of special heat-treated nickel chrome molybdenum steel and are 8 in. between centers. The connecting rod bearing is $2\frac{1}{2}$ in. in diameter and $1\frac{25}{32}$ in. long.

Provision is made for electric starter, generator, compressor or vacuum pump. A governor of the vacuum type is provided. The fuel nozzles are of the pintle type and a standard plunger type fuel pump is used. Oil bath air cleaners and fuel strainers are supplied. The DOO engines weigh approximately 750 lb. net.

Delco-Remy Starting Motor

Illustrated is a 24-volt 20-h.p. Delco-Remy starting motor for Diesel engines up to 1200 cu. in. displacement. A standard motor car starting motor de-



ENGINES

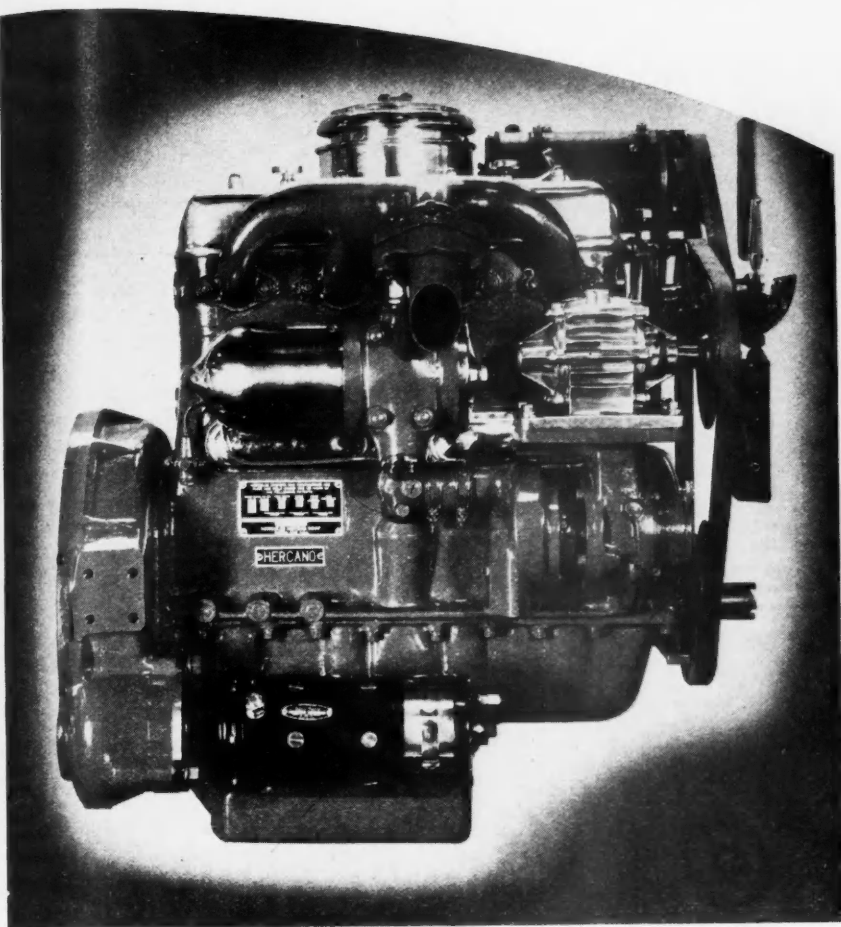
velops 1 h.p. All bearings have bronze bushings, and are supplied oil through saturated oil wicks. Also available in 12 32-volt models.

Terminals and brushes are designed to carry current values, up to 1500 amp. that prevail in cranking large engines. Special switch contacts of an alloy material, working against each other, are used in the starting motor solenoid, to prevent fusion.

A Dyer drive is used to engage the starting motor with the engine for cranking. This drive completely engages with the flywheel teeth before the switch contacts are closed, an essential feature when starting Diesel and large gas engines.

New N-Type Purolators

Purolator's new N-type oil filters, N-1603 and N-1607, which will supersede

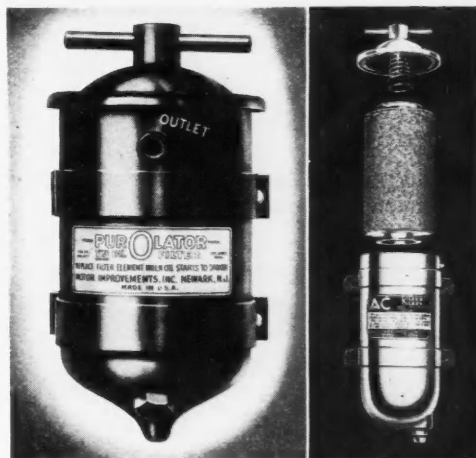


Above and on the opposite page: right and left side views of the new DOO series Hercules 4-cylinder diesel engines, 226.2 and 198.8 cu. in. displacements.

Top left corner: Delco-Remy 20 h.p. diesel starting motor available in 12, 24 and 32 volt sizes. Right: The N-type Purolator and the AC Klee-Kleen oil filters, both featuring replaceable filtering elements and oil color-restoring properties.

For further descriptions of these items, see accompanying article.

& ENGINE ACCESSORIES



the N-600 and N-700, have far greater capacity for filtering and retaining dirt. Not only is all foreign matter effectively removed from the oil stream but the oil is actually returned to its original color. Special fittings are available for all cars and trucks. The replaceable filtering element slips in and out easily without tools. Made by Motor Improvements, Inc., 365 Frelinghuysen Ave., Newark, N. J.

AC Klee-Kleen Filter

This new oil filter for bus, truck and tractor use, not only cleans oil, but also removes discoloration, thus assuring that the engines are operating always on perfectly clean oil. Therefore maximum oil economy, as well as maximum engine life, are certain. The AC Klee-Kleen oil filter can be mounted anywhere on the engine side of the dash. Its equipment includes the necessary

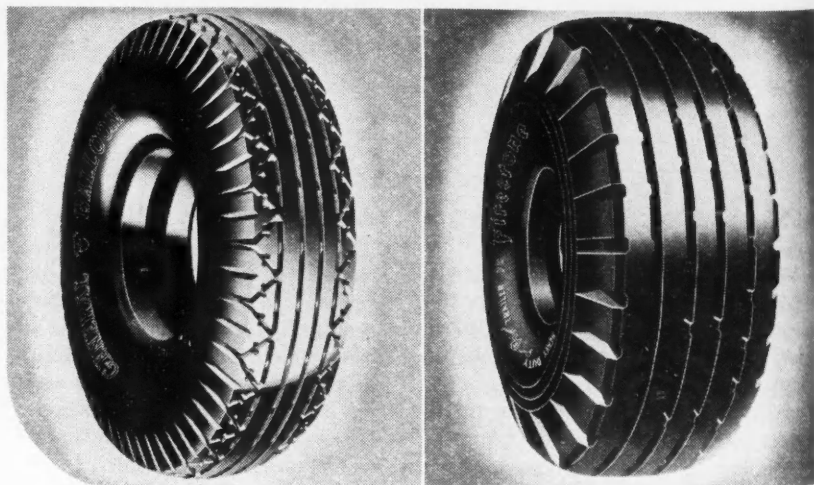
fittings and two 10-in. lengths of "Flex-o-tube" tubing. Copper tubing and mounting bolts are not furnished. Once mounted, this filter need never be disturbed or disconnected—even when replacing filtering unit. Filters 60 qt. per hr. made by the AC Spark Plug Div., General Motors, Flint, Mich.

**More Engines and Accessories
on Page 104**

TIRES



MAKERS SCORE WITH



Directly above is one of three new Bender-bodied trucks recently put into service by the B. F. Goodrich Co., to assist its dealers in setting up displays. The five tires illustrated across the bottom are: General Highway truck tire for the light-duty field, the new specialized Firestone trailer tire, a heavy-duty commercial Goodrich, the new top-quality R-1 Goodyear and the Goodrich "earth-mover" with load capacity of 15,740

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IN tire history 1937 will probably be recorded as the year when tire makers got around to building truck-type tires for commercial vehicles in the $\frac{1}{2}$, $\frac{3}{4}$ and 1-ton range. Fleet operators are now getting the benefit of this development and will get it in increasing measure as they make replacements.

Perhaps in no field of operation are tire costs per mile so high as in the so-called $\frac{1}{2}$, $\frac{3}{4}$ and 1-ton range. The only types of tires that were available were passenger types and at high speeds under varied loads they took beatings which they were not designed to stand. The result was uneconomical operation.

This year the tire industry did something about it. Today for this service there are available in a number of makes tires designed to truck specifications. More rugged in construction they are built to give efficient service at high speeds. The effect on fleet costs will be beneficial. Said one tire maker: "We are not at all fanciful when we say that operating cost can be cut by 50 per cent as compared to operating cost of the passenger-car type."

FOR this service B. F. Goodrich Co. has a specially designed line of heavy-duty commercial truck tires and tubes. A complete range of sizes fits present equipment rims in 16-in. wheel diameters. These sizes are 6.00-16; 6.50-16; 7.00-16; and 7.50-16. All are made with six plies, while the last is also made with eight plies.

The new tire follows the development by Goodrich in recent years, of the "Commercial 15" and the "Store Door Silvertown" tires, also specially designed to fit specific services in the light truck field.

For use with the 7.00 and 7.50 sizes the company has developed a new all-black tube equipped with hand-bendable rubber valves designed especially for speed conditions encountered in the light truck field.

Advantages, as compared to passenger car type tires previously used, are listed by the manufacturer as: Tread 22 per cent wider; tire 11 per cent heavier—more rubber; more traction; less skid; more safety; more mileage; fits present equipment rims; no wheel changes; greater resistance to bruise breaks.

GENERAL Tire & Rubber Co. offers for this same service its General Highway truck line. Four sizes are available: 6.00-16, six-ply; 6.50-16, six-ply; 7.00-16, six-ply and 7.50-16, six and eight-ply.

These tires are built of truck fabrics and according to truck specifications throughout but are designed for full drop center and semi drop center rims. The tread design is the Highway type, designed to produce the longest mileage in the many varieties of service in which light trucks are engaged.

SPECIAL service designing is being extended into other fields. Firestone Tire & Rubber Co. has a new tire spe-

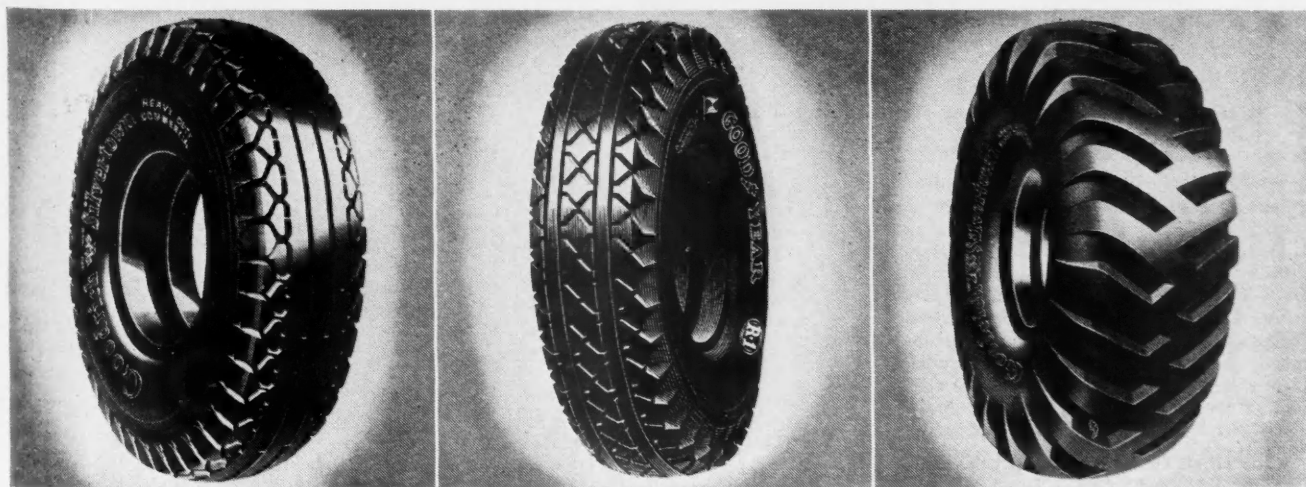
cially designed for use on commercial trailers and semi-trailers.

The new tire is silent rolling, prevents side skid and reduces operating costs by giving much greater mileage. The destructive factors of road crown, sag of axles under heavy load, bearing wear and uneven inflations prevalent in ordinary tires are also eliminated.

GOODRICH has a truck tire designed for heavy service in the mining and construction fields. Known as "earth movers," they will carry a maximum of 15,740 lb. a casing, or nearly 8 tons, are mounted on 13-in. rims, and are available in 12, 16 and 20 plies. They may be purchased with two types of tread, one for trailer uses on free moving wheels, and the other a super-traction tread for mud and soft ground.

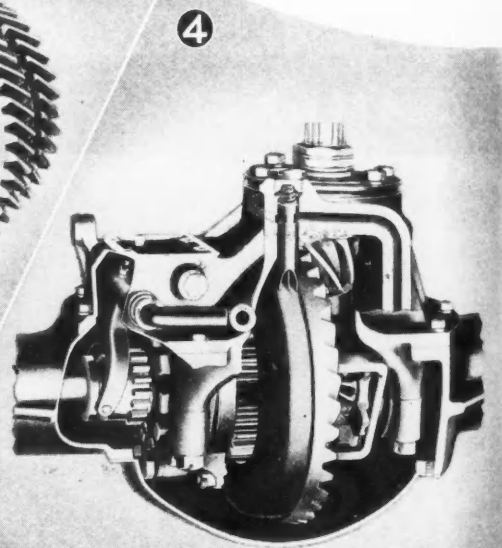
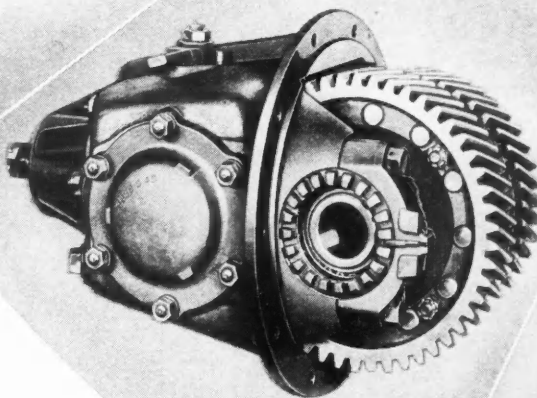
Section seven TIRES

COMMERCIAL TIRES FOR SPECIAL USES



COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

COMPONENT & REPLACEMENT



1. Goodrich 12-volt DLK type Diesel battery with end-to-end cell assembly. 2. Sectional view of the Exide type XMHR heavy duty commercial battery. 3. New type standard Timken driving axle. 4. Eaton Ruckstell two-speed axle. 5. Delco-Remy series parallel, 12-24 volt switch. 6. Four of seven Thermoid friction materials available in custom brake block sets. 7. A typical AC Blue Top model.

See article for detailed descriptions.

1. Goodrich Diesel Batteries

A complete line of 6-, 8- and 12-volt diesel starting batteries augments the range for automotive batteries offered by the B. F. Goodrich Co., Akron, Ohio. Many of these diesel models are made under the Kathanode patents using spun glass retainer mats, said to greatly increase battery life.

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**COMPONENT &
REPLACEMENT
PARTS**

PARTS

2. Exide XHMR Batteries

Exide will offer during the coming year its type XMHR battery for commercial service, available in 13-, 15-, 17- and 19-plate sizes with 20 hr. capacity ratings of 101, 118, 135 and 152 amp. hr. respectively. All are oversize capacity featuring combination separators of Mipor, made from latex base, and slotted rubber plate protectors. Other Exide features including deep sediment space and plates with feet and rounded corners to eliminate bottom short circuits are shown in the cross-section view. Electric Storage Battery Co., Philadelphia, is the maker.

3. Timken Driving Axles

During the past year The Timken-Detroit Axle Co. has incorporated into its Standard Line of rear driving axles two outstanding features. The first of these is a new method of protecting the bearing surfaces during the vulnerable "breaking in" period. By means of a process known as Lubri-coting, the gear and pinion teeth are now plated with a metallic lubricant which shields the extreme outer surface of the gear case until it has been hammer hardened in service. By the time the Lubri-coting has worn off, the teeth are perfectly mated and the gear and the pin-

ion are ready for extended service.

The second feature is the new one-piece pressed steel axle housing with rectangular section. This design is produced in three basic capacities to accommodate three types of final drive—the bevel gear drive, the double reduction drive, and the 2-speed double reduction drive.

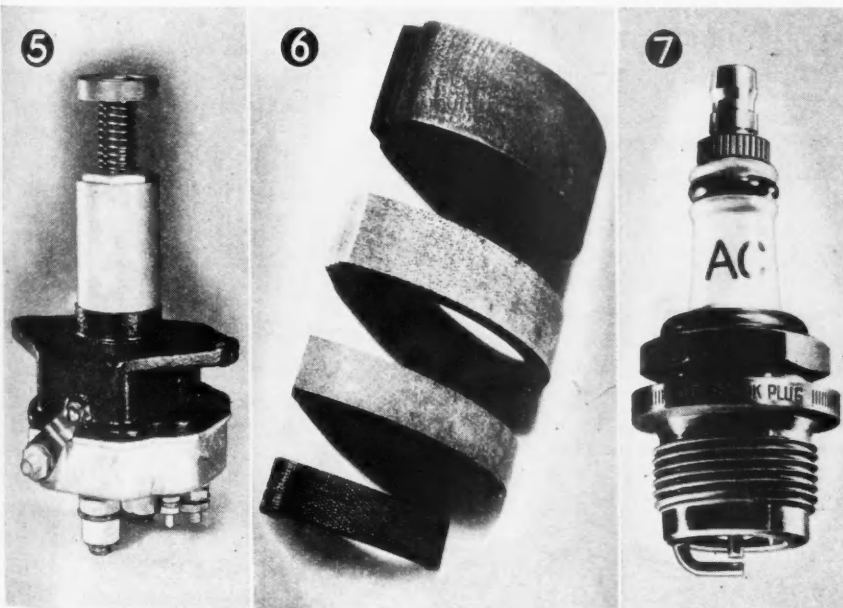
4. Eaton Two-Speed Axle

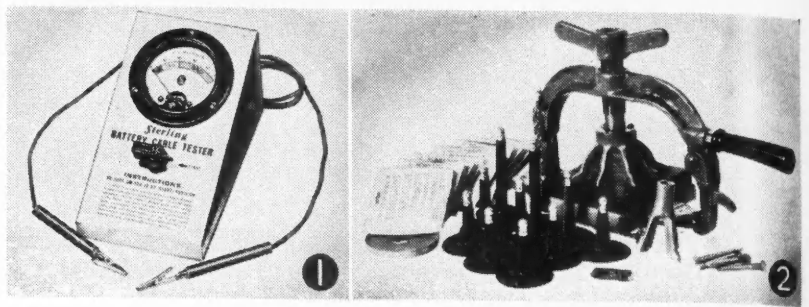
The Eaton Two-Speed Axle made by the Eaton Mfg. Co., Cleveland, Ohio, gives two final drive ratios through the use of four planet gears and a sun gear mounted within the rear axle housing. The ring gear is machined from the finest steel heat treated and ground so that it resists distortion under the severest torque stresses. An electrically welded steel housing assures permanent adjustments and prevents deflection under load. Increased gear sizes assure long life under difficult operating conditions.

5. Delco-Remy Switch

Delco-Remy division of General Motors Corp., Anderson, Ind., has announced a new series parallel switch for use on 12-24-volt electrical systems on diesel-powered trucks, giving 12 volts for lighting and accessories combined with 24 volts for starting. The unit is splash-proof, carries its own fuses to protect internal circuits and may be wired through two ammeters to determine whether each battery is being charged.

MORE PARTS ON PAGE 108





SHOP EQUIPMENT

SINCE labor unrest and number of working hours have become a major problem in the fleet transportation industry it has become apparent that some fleets which up to now have been getting by with a minimum of shop equipment will have to equip themselves with modern shop tools. It seems fairly obvious that shop personnel will work fewer hours in the future and it is highly possible that this reduction in hours will be accompanied by an increase in the pay envelope.

This leaves the fleet operator one method of operating his shop without increasing the cost. Presumably he cannot employ men of greater skill and speed because he already has the best men he can get. Still, these men must be made more efficient. The only way of doing this is to provide the men with labor-saving devices so that they can accomplish at least as much work in the shorter week as before.

In addition it seems logical that there will be less labor trouble in the well-equipped shops because whether they realize it or not the shop crew is always better satisfied when it is provided with the things necessary to do work swiftly and safely. There seem to be grounds for the thought that the well-equipped shop attracts the best mechanics.

Figures from 1 to 5 are described on these pages with identifying headings. Fig. 6 is a Joyce-Cridland lift, 7 a Walker unit lift, 8 a Van Dorn "shorty" drill. These with many other shop equipment items are further described on other pages.

1. Sterling Cable Tester

A new meter for testing battery cables has been developed by the Sterling Cable Corp., Port Huron, Mich. The device is a precision instrument with which it is possible to determine the amount of voltage drop occurring between the battery post and the cable terminal. The meter reading establishes whether or not the cable is delivering full current from the battery to the electrical system.

Compact and readily portable, the cable tester consists of a voltmeter and switch mounted in a sturdy metal frame. Two leads clip on battery post and cable terminal. The meter dial is calibrated in D.C. millivolts and is also divided into green, yellow and red areas to indicate that the cable is good, fair, or bad.

2. Schrader Vulcanizer Set

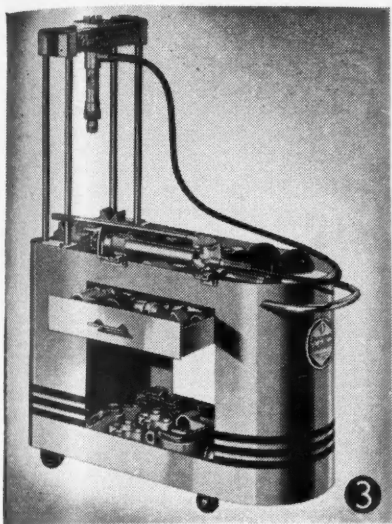
A. Schrader's Son, Brooklyn, N. Y.,

has now added to its line of tire valve products a valve and tube vulcanizer set, which will take care of the entire range of Rubber Covered Valve Replacement applications in one unit. The set consists of one vulcanizer, and 10 Schrader rubber covered replacement valves, with a heat unit for each valve. The use of the vulcanizer requires no special wiring or electrical attachments. Operation is quick, simple and controlled.

3. Blackhawk Porto-Power

The hydraulic ram and fixtures made by the Blackhawk Mfg. Co., Milwaukee, Wis., known as Porto-Power, now comes in a new portable stand which has a drawer which can be locked. The new stand is 32 in. high, 20 in. wide and 48 in. long. The ram weighs 10 lb. Rams up to 20 ton capacity are available with numerous fixture assortments.

Section nine SHOP EQUIPMENT



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4. Lincoln Lubmaster

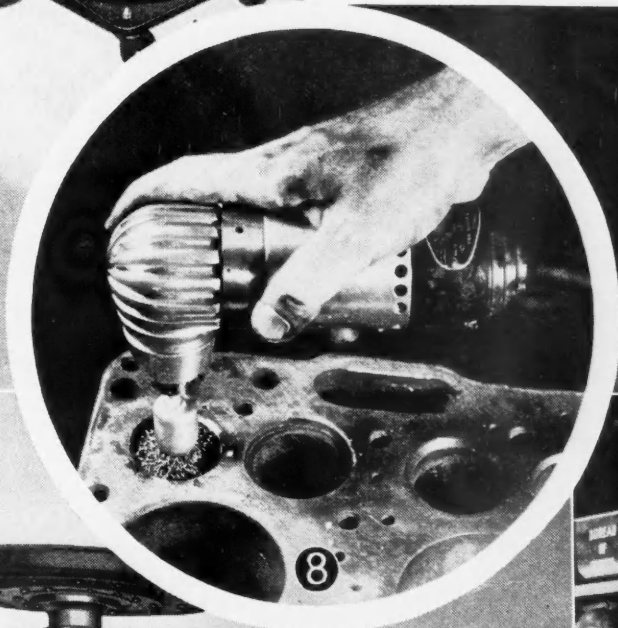
Model 291 Lincoln Lubmaster for dispensing chassis lubricant direct from 400-lb. container is one of the new items being manufactured by the Lincoln Engineering Co., St. Louis, Mo. It has a capacity that is sufficient to serve eight outlets. It is a two-stage unit, with a primer pump to lift lubricant from the 400-lb. container to the high pressure unit. The drum of lubricant is mounted on a movable caster base for ease in substituting a full drum for an empty one.

5. Sioux Electric Sander

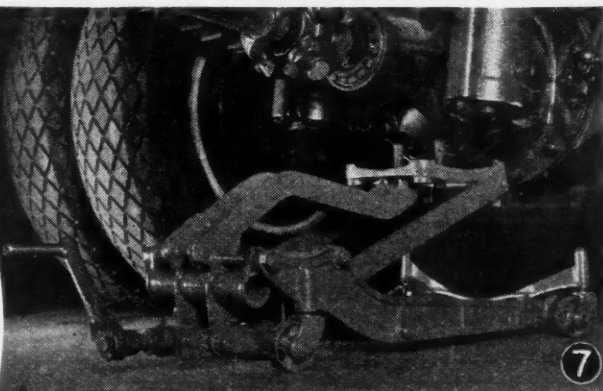
Three important new features are now incorporated in the Sioux No. 1255 Two-Speed, and the No. 1250 7-in. Heavy Duty Portable Electric Sanders.

A new Sioux Air Director Guard directs the blast of dust and grit loaded air away from the operator's face when moving the sander back and forth in use. This guard also serves as a stand for the sander when not in use, protecting the sanding discs from injury and avoiding damage to housing from

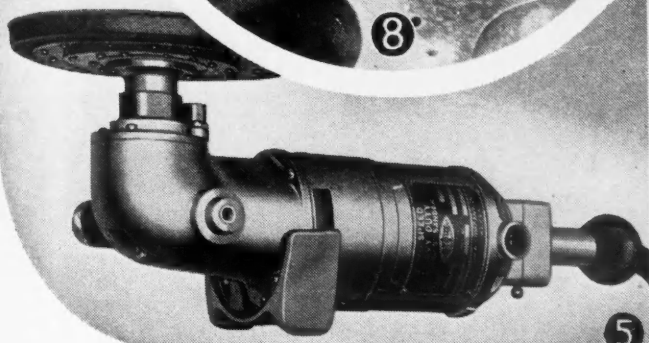
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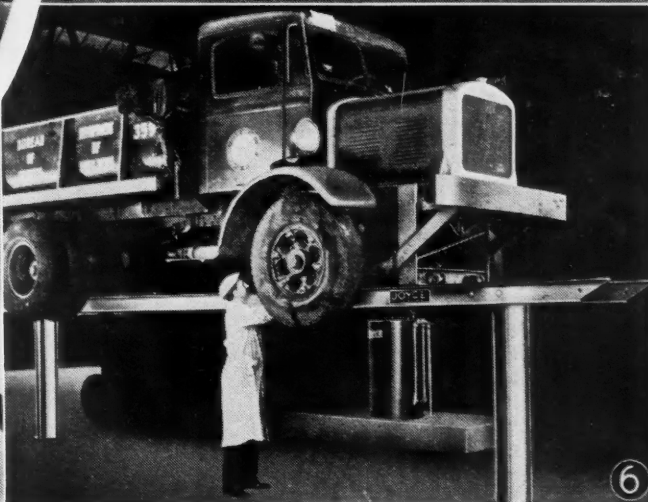
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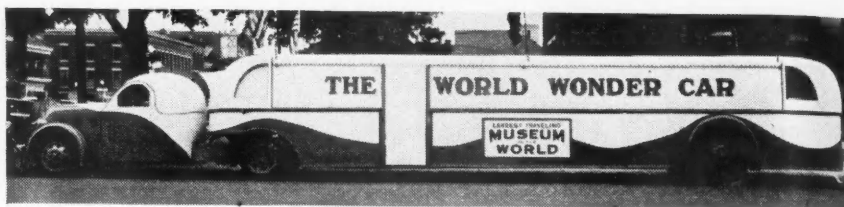
Section
Ten

APPEARANCE EQUIPMENT

ONE look at the truck and body sections of this issue should be sufficient to convince even the toughest skeptic that manufacturers and operators alike are appearance conscious. All along the line famous stylists are being called upon to play up this important feature. Everywhere operators are finding that the advertising value of their rolling stock pays dividends.

The color combinations used by fleet men are limited only by the color spectrum. Catering to fleet men, the leading paint manufacturers have advisory technical staffs ready to give fleets the benefit of their experience.

Described below are a few representative products which perform the common mission of helping to keep the new equipment shiny and to restore the old.



APPEARANCE EQUIPMENT

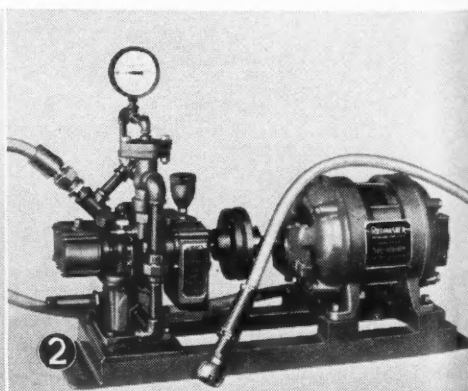
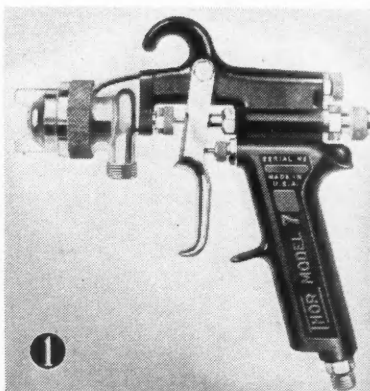
1. Thor Spray Gun

The new No. 7 Thor spray gun has replaced the No. 2 gun in the Binks line of paint spray equipment. This new gun has a drop forged aluminum gun body with a black electrolytic coating for surface protection. The air nozzle is drop forged bronze, chromium plated. The fluid needle valve is stainless steel, adjustable to compensate for wear. The gun weighs 2½ lb. and sells for \$30. Made by the Binks Mfg. Co., 3113 Carroll Ave., Chicago.

2. Rotawasher

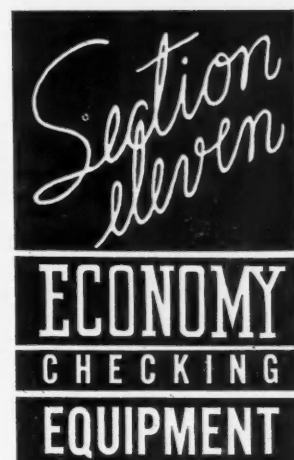
The Rotawasher car washer made by the Rotawasher Corp., Cleveland, Ohio, (TURN TO PAGE 88, PLEASE)

Above: The World Wonder car, a special 52-ft. traveling museum now on tour in the U. S. and Mexico. It operates under a special Federal permit. The unit is finished with Sherwin Williams Kem Transport enamel. Below: 1. The new Binks model 7 gun. 2. The Rotawasher pump. For further product details, see accompanying article



ECONOMY

CHECKING EQUIPMENT



TO assist fleets in keeping costs close to the proverbial bone, makers of economy checking devices offer a wide variety of mechanical aids. While most of these instruments are directed at erring engines or at specific engine parts, others, such as the time recording devices, keep drivers on their toes.

1. Spark Plug Service Unit

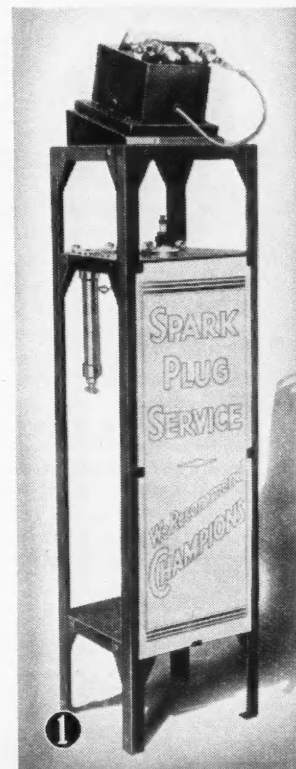
The Service Unit made by the Champion Spark Plug Co., Toledo, Ohio, provides an efficient method of cleaning spark plugs at a great saving of time. The service unit uses a special abrasive which provides a thorough cleaning in a few moments' time. The tester unit tests plugs under compression similar to operating conditions in the engines and shows immediately a

weak or wavering spark. In addition to saving time in servicing plugs the unit makes it possible to withdraw plugs from service accurately as soon as they become inefficient.

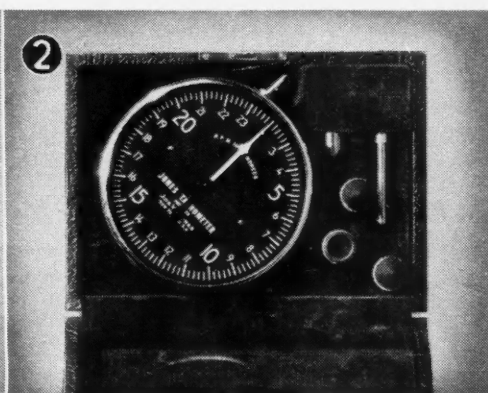
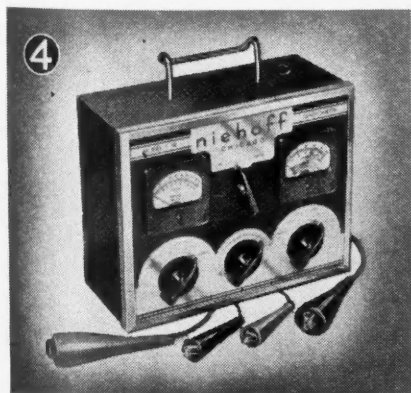
2. Jones Tachometer

In order to speed up governor adjusting, the Jones-Motrol Sales Co., 450 Whitlock Ave., New York, offers the Jones hand tachometer which makes it possible to take accurate engine readings either from the end of the crankshaft or by means of a short flexible shaft held against the end of the generator or other revolving shaft. The tachometer shows instantaneously and without the use of a stop-watch or other

(TURN TO PAGE 94, PLEASE)



1. The newly-developed Champion spark plug service unit. 2. The Jones-Motrol and tachometer for handy engine speed check in conjunction with governor setting. 3. Potter five-unit engine analyzer complete with stand. 4. Niehoff Generometer for all generator adjustments. For further product details, see accompanying article



*Section
twelve*
**FLEET
SUPPLIES
& MISCELLANY**

Alkosave

Evans Products Co., Detroit, Mich., has a simple valve which operates automatically and safely seals the radiator, pre-

venting loss of water and anti-freeze usually caused by evaporation.

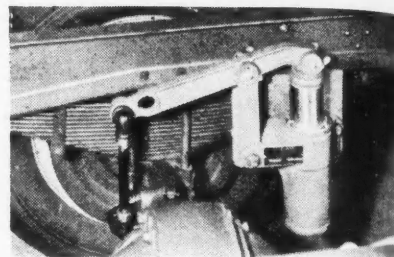
This valve, known as Alkosave, is fitted to the bottom of the radiator overflow pipe by means of a rubber bushing, making the cooling system air-tight. The valve opens only under pressure which permits the steam to escape should engine trouble cause overheating. This function is fully automatic. Installation can be made by anyone in a minute's time.

Following actual truck fleet tests over a period of more than a year, under all climatic conditions, it is claimed that this valve eliminates alcohol fumes, acts as a safeguard against winter "freeze-ups" and makes one adequate filling of anti-freeze

(either volatile or non-volatile) last all winter in a properly operating engine.

Cle-Air Shock Eliminators

The design of Cle-Air air suspension units is such that the shock is absorbed in a compressed air cushion. The rebound of the steel springs is controlled hydraulically. This combination provides a two-way action shock absorber in addition to the air suspension feature. The compressed air is



contained within a heat treated alloy steel cylinder with a closed end which also serves as the upper fitting. The hydraulic action is controlled by a simple metering device whose effectiveness cannot be affected by wear or climatic conditions.

Gasket Paste

The necessity of coating all head gaskets with a gasket paste or cream that will not dry out, yet will give positive sealing protection against seepage of cooling liquids, etc., is recognized by the leading automobile manufacturers who now use P. O. B. Perfect Seal, manufactured by the P. O. B. Manufacturing Co., Cincinnati, as original equipment. Cadillac, LaSalle, Packard, Oldsmobile, Nash, Graham, LaFayette, Studebaker and many others in the passenger car and truck fields, as well as tractors, not only use this gasket cream on head gaskets but on cylinder head stud belts, threaded joints, etc., in the new car assembly.

Solvent

Oakite composition No. 9 made by the Oakite Products, Inc., N. Y., has the characteristics of an oil soluble emulsifier. The material equally soluble in oil or water has a very strong solvent effect on partially decomposed oil carbonaceous materials and gums which form on the interior parts of the engine. When this material is added to the crankcase oil of an engine it has an effective loosening action on gummy and carbonaceous residues so that a great deal of the accumulated sludge is carried away in the oil when the engine is drained.

Flux for Special Steels

RUBY Chemical Co., 68-70 McDowell St., Columbus, Ohio, has just announced a new soldering flux for use when soldering stainless steel. Long a difficult metal to work with, stainless steel may now be soldered without the use of special solder or soldering equipment. The new flux is inexpensive, does not give off offensive odors and is available in pints, quarts or gallon lots.

(TURN TO PAGE 60, PLEASE)

No Wonder this Shop Superintendent likes **HOOF GOVERNORS**

(10 to 50 Series)

● The men "who keep 'em rolling"—the fleet maintenance and repair superintendents—should know why Hoof Governors are free from charges made against ordinary governors. No maintenance expense, no time wasted in road testing, no road tie-ups—and, they're tamper-proof.

No Maintenance!

● L. M. Holtz, Shop Superintendent of the nationally known Lasham Cartage Company of Chicago, has to keep over one hundred Diamond T, Studebaker and Autocar units rolling with the lowest possible maintenance overhead. Holtz freely admits:

"No sir, I have had absolutely no maintenance expense on the eighty or so Hoof Governors in constant service on our fleet. They were set at the Hoof factory and after installation we haven't had to touch 'em—and no driver has reported road trouble either."

● Hoof Governors, seal type, key type, and dash control type, are tamper-proof and trouble-proof. Because of their exclusive cantilever spring feature, they are dependable under all operating conditions. They allow the full rated engine power at the governed speed so vital to maintaining fleet schedules. Drivers prefer them.

Write for name and address of Hoof Jobber or branch nearest you, and all full details of the new Hoof special calibrated governor in the box with the gold and black label.

L. M. Holtz, shop superintendent of Lasham cartages, Chicago, and one of the Hoof governor equipped Studebaker trucks he "keeps rolling."



HOOF PRODUCTS COMPANY

162 NO. FRANKLIN
STREET

*Cantilever
Governors*

CHICAGO
ILLINOIS

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

SKIRTS ARE HIGHER THIS
YEAR .. *Yes, and so are
sales on*

HYDRAULIC BRAKING!

SKIRT styles may change . . . they may be short today and long tomorrow . . . but not so with Hydraulic Braking. Since the introduction of Hydraulic Brakes, each year has seen cars and trucks so equipped sell in greater proportion than the year preceding. Here's why:

Hydraulic Brakes make for smooth, equalized, easy-pedal stopping. No lubrication is necessary . . . and servicing is seldom required. They're sturdy, of course—and long lived . . . built "to take it."

With advantages like these, demand for Hydraulic Braking is enormous. Car owners and truck operators alike want the assurance that Hydraulic Brakes bring. Thus, Hydraulic Braking frequently determines a prospect's choice of one truck over another.

That's why almost all truck manufacturers are specifying Hydraulic Brakes. It's a preference that's applauded by the man who buys, the man who drives and the man who services trucks.

HYDRAULIC BRAKE COMPANY
DETROIT, MICHIGAN

LOCKHEED HYDRAULIC BRAKES

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORP.

FLEET SUPPLIES

(CONTINUED FROM PAGE 58)

Gum Eliminator

The Shaler Company of Waupun, Wis., has developed a new product for conquering carbon. The Shaler Co. states that there is no known ingredient that will dissolve carbon, but it has proven that the existence of carbon is due to an adherent or binder which causes carbon to accumulate. Carbon will not cling to any metal surface or moving part. When carbon is associated with the natural gum formations from motor fuels and lubricating oils, the

carbon particles are bound together and cling to pistons, valves and rings.

This new product, Karbout, will dissolve all types of motor gums and as the gum is dissolved, the carbon particles are freed and disappear with exhaust fumes.

The combination of Shaler-Rislone, which is added to the crankcase oil, and Karbout in the motor fuel, will eliminate all possibility of gum or carbon formations taking place. This assures good lubrication at all times, restores lost compression and power, assuring a quieter, smoother-running engine.

Both are guaranteed to be free from any ingredients that can harmfully affect the engine.

Radiator Cleaner

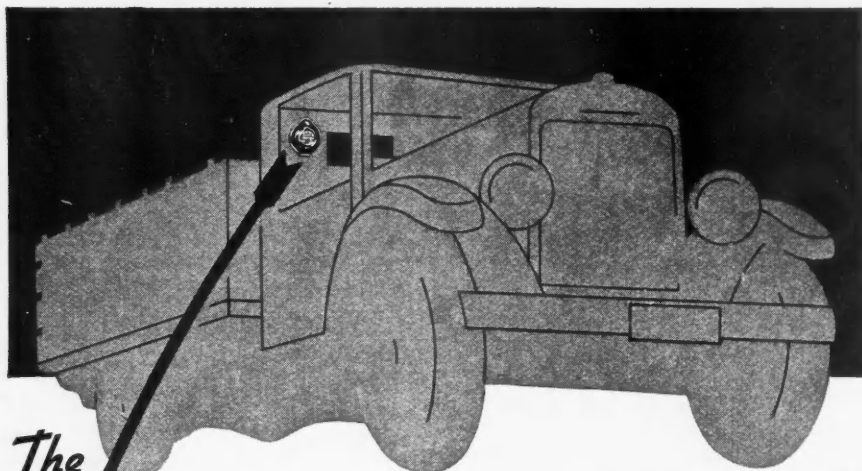
PH7 is a radiator cleaner and corrosion inhibitor made by the Chicago Chemical Co., 6223 West 66th Place, Chicago, Ill. The compound can be used to clean radiators and its action is to reduce rust and scale to minute particles so that it will drain out with the coolant. A small application will act as an inhibitor and will prevent rust formation for about 6 months. The substance is neither acid nor alkaline and it will not harm rubber, paint or bright work. It is not affected by anti-freeze. It is sold and recommended by several large truck manufacturers.

Kinnear RoL-Top Door

The steel RoL-Top door which is made by the Kinnear Mfg. Co., Columbus, Ohio, is suitable for freight platforms and garage doors. This door is composed of sections of heavy steel galvanized by the hot process. It operates similar to the wood upward-acting sectional door. Counterbalance is accomplished by one or more springs and operation can be manual or motor with chain or reduction gearing on this installation. This door is burglar-proof and weather-tight and its durability makes possible the use of light sections.

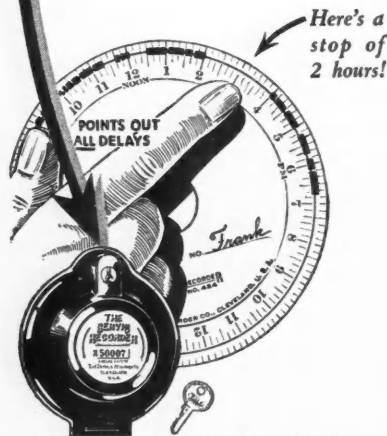
C & J Solvents

The Craver & Jay Co., Kansas City, have two chemicals which when used together comprise a treatment for removing gum, sludge and carbon from engine internals. One liquid is applied through the carburetor and the other through the crank-



The SPOT of CONTROL!

*This Little Device
Tells You When
Truck Was Working
and When It
Was Standing Idle
... All Day Long!*



Here's a
stop of
2 hours!

A "pound and a half of management," you might call it—YOUR representative on the truck, and on all the other trucks which you own and operate. Many things combine to waste a truck's time, but they all show up on the clock-driven chart of the *Servis Recorder*. And, by the way, why should anyone operate trucks without this simple device, which *lays on your desk* a complete "picture" of the very facts you must have before you can even begin to intelligently control your motor trucks.

Small—easy to install—attached in two minutes time to any truck by a couple of screws or bolts; you could even nail it on and it would work. (Not attached to hub or running gear.) Strong and sturdy—will outlast the truck.

Write for booklet—*Ten Ways of Getting More Work Out of Motor Trucks*. It's FREE.

THE SERVICE RECORDER CO.
1422 Euclid Avenue • Cleveland, Ohio

The Servis Recorder
Tells Every Move Your Truck Makes



case filler. The treatment involves 15 minutes labor and there is a \$5,000 insurance policy in effect against the treatment doing the engine any harm.

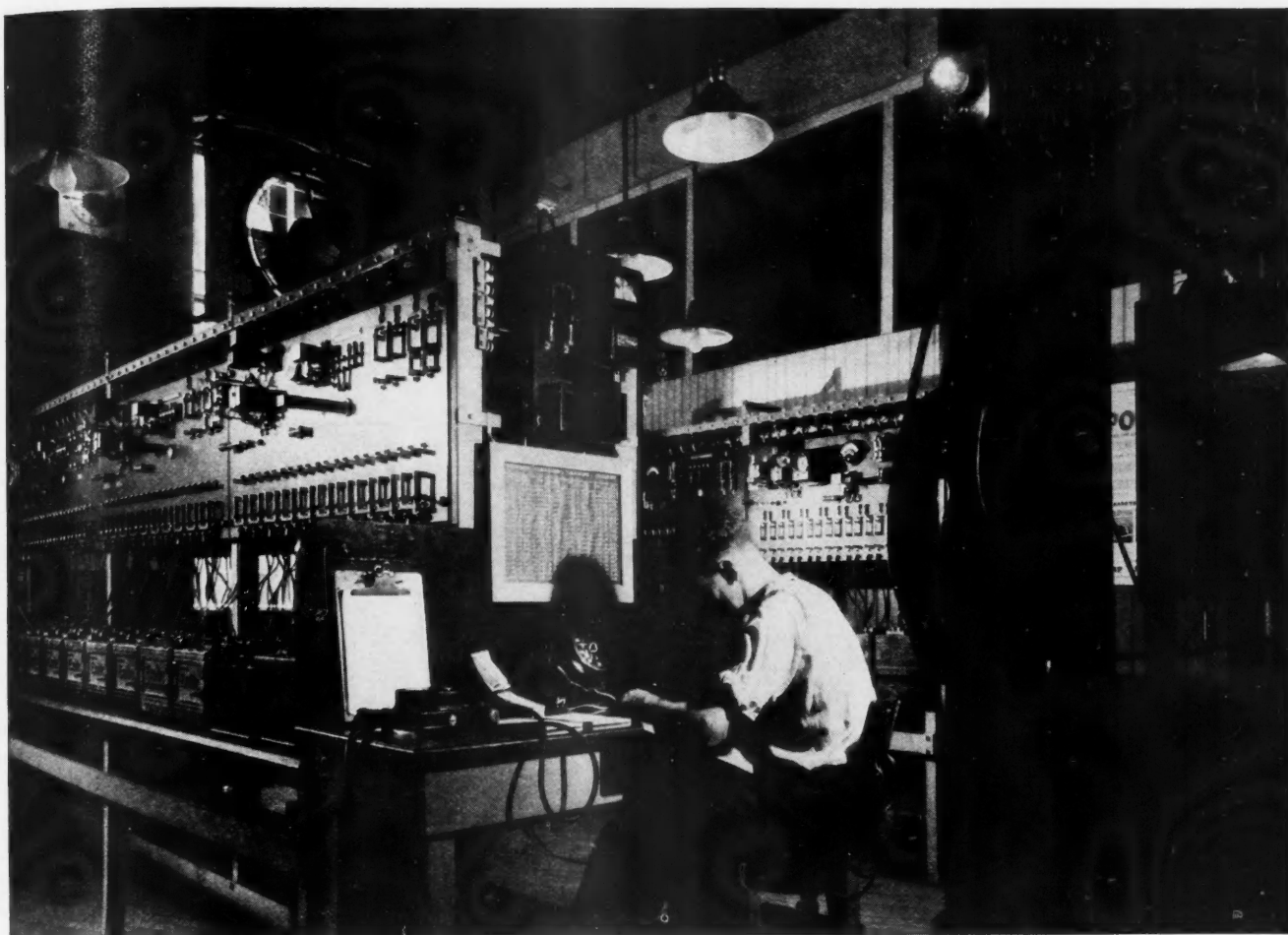
Electrical Waterproofing

The Loynes Specialty Co., 243 Chestnut Ave., Long Beach, Calif., is offering Ignition-ite in three sizes; ½, 1 oz. bottles and shop size cans. This waterproofing material is easily applied and eliminates all ignition troubles due to dampness or moisture.

Engines with their ignition systems thoroughly soaked with water can be readily started after applying Ignition-ite to the coil, distributor, head, spark plugs and wiring, wherever there may be electrical leaks. When applied to dry motors the material acts as a positive guarantee against stalling even with the entire sys-

(TURN TO PAGE 62, PLEASE)

The idea is to wear them out as fast as possible



Exide's "life cycle" test treats batteries ten times as rough as actual service

EXIDE Batteries for commercial vehicles are built for long life. Put one in actual service—the toughest kind of service—and it will take you many months to approach the limit of its life.

Exide gets such facts by a quicker, shorter route—by means of the "life cycle" test that compresses a year of the hardest service into just one month. Besides saving time, giving ten to twelve times quicker

results, this test can be run on dozens of batteries at a time, thus presenting a reliable cross-section of Exide production. The apparatus puts all batteries combined through 294,840 cycles of charge and discharge a year.

Nobody could be more critical than Exide engineers themselves. When they are satisfied with the performance and stamina of a battery, you *know* that battery is dependable. The Exide line is complete, with Commercial Type

Exides that take care of 90% of all commercial vehicles, and the Exide heavy-duty line for large trucks. Why not let Exides cut your battery maintenance costs?

Exide

COMMERCIAL TYPE BATTERIES

WITH MIPOR AND
SLOTTED RUBBER

"Mipor," Reg. U. S. Pat. Off.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia

The World's Largest Manufacturers of Storage Batteries for Every Purpose

Exide Batteries of Canada, Limited, Toronto

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NOVEMBER, 1937

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FLEET SUPPLIES

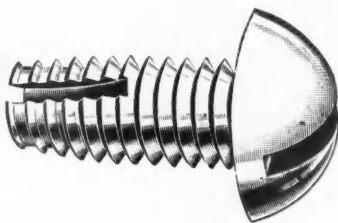
(CONTINUED FROM PAGE 60)

tem flooded with water. Terminals of a small electric motor, a light bulb and the connecting wires, after being Ignition-ited, are placed under water and perform as well as in dry air, as a demonstration test.

Battery terminal corrosion is eliminated entirely when coated with the material. It is not affected by heat, cold, or gasoline and insures positive protection for ignition systems from rain, snow or any other type of dampness. Liquid in form it is applied with a brush, drying immediately.

Thread-Cutting Screws

The Shakeproof Lock Washer Co. has recently announced the development of a

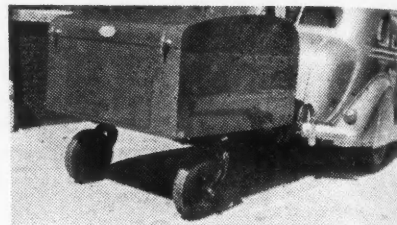


screw that actually cuts its own thread in metals and plastics of practically any

thickness. Its patented, thread-cutting slot, plus a special hardening process, eliminates the separate tapping operation normally required in the use of standard machine screws. Should it ever be necessary to replace the screw, an ordinary machine screw of the same size will fit its threads. A free demonstration kit of Shakeproof Thread-Cutting Screws, including an assortment of different sizes and complete instructions for testing, can be had by writing the Shakeproof Lock Washer Co., 2501 North Keeler Avenue, Chicago, Ill.

Rose Trailer

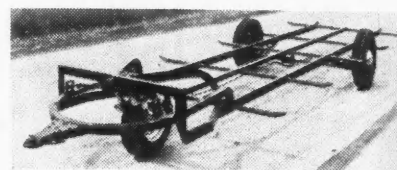
The Frank Rose Mfg. Co., Hastings, Neb., manufacture a line of two-wheel trailers weighing less than 600 lb. The



one illustrated weighs 587 lb., has a body length of 6 ft., overall height 32 in. and road to floor height of 24 in. It uses 4.00/8-4 ply tires and has a 40-in. tread.

Saginaw Trailer

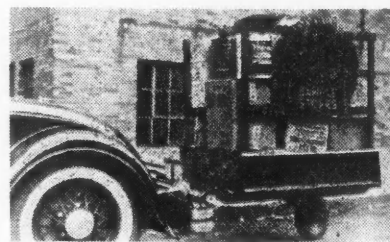
The Saginaw Trailer Products Co., Saginaw, Mich., have a freight conveyor which uses a self-aligning third wheel to carry the front load of the trailer so that no



weight is upon the towing vehicle. The low platform models have inside dimensions of 6 ft. 6 in. in height, 6 ft. wide and 16 ft. in length. The capacity is two tons.

Anthony Trailer

Anthony Co., Inc., is the manufacturer of a Single Wheel Type Trailer that is hitched to the passenger car. It is very popular with Sportsmen, Salesmen, Mer-



chants and Farmers. Twin spring suspension shackled in rubber insures soft riding and permits the Trailer to adjust itself to every load and road condition with swayless trailing.

You can depend upon
it—your ton-mile
costs will go
merrily down
when you
insist
on

TIMKEN
Tubular Axles
ON YOUR TRAILERS

The strongest, most rigid axle we know of—and we know them all; a special alloy tubular center, and special steel spindles, butt-welded into a husky integral unit. Five new basic capacities to meet every trailer requirement. Brakes available in a wide variety of sizes and types, including Timken Heavy Duty and Mountain-type 2-Shoe Brakes.

Literature sent on request.

THE TIMKEN-DETROIT AXLE CO., Detroit, Mich.

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AB JENKINS AND GULF SMASH 159 RECORDS!

Gulf No-Nox Ethyl and Gulfpride Oil Trim Previous "Bests" on Utah Salt Flats

USING the very same Gulf No-Nox Gasoline, Gulfpride Oil and Gulf Chassis Lubricants that any motorist can buy from any Gulf Dealer, Ab Jenkins established no less than 159 World's International and American official records on the famous Bonneville Salt Beds, under the supervision of the Contest Board of the American Automobile Association.

Amazing? Yes—but you can expect top performance from products made by Gulf!

For example, Gulf made almost a clean sweep at the National Air Races. Gulf was used to win 8 out of the 11 closed course races, including the famous Thompson Trophy and Greaves Trophy races—the American aviation classics. Gulf was used by pilots in capturing 30 of the 45 possible places.



AB JENKINS says "Ready!" for a standing start. "Gulf No-Nox has a get-a-way that makes old-fashioned lightning take a little dust," according to spectators who watched the Speed King's performance.



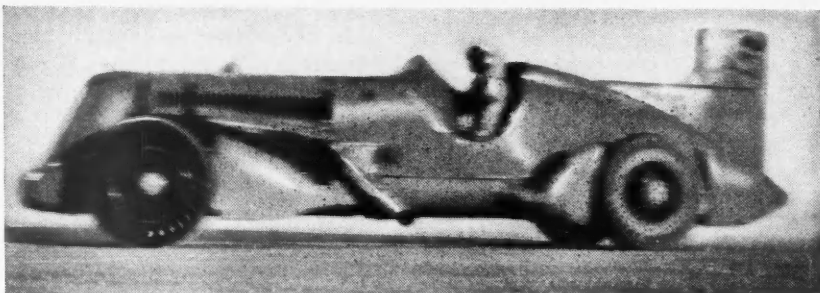
A SHOT OF OIL—Gulfpride, of course!—and watch out records! Ab Jenkins chooses Gulfpride because Gulfpride has everything it takes to make a champion—100% Pure Pennsylvania—super-refined by Gulf's patented Alchlor Process—and staying power to spare!

... AND SWISH! Hold your hats! There go the champions—Ab Jenkins, Gulf No-Nox, Gulfpride Oil, and Gulf Chassis Lubricants!

GULF PETROLEUM PRODUCTS



Gulf Oil Corporation
Gulf Refining Company
Pittsburgh, Pa.



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NOVEMBER, 1937

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WHITE

(CONTINUED FROM PAGE 36)

tically received by operators in the low-price field.

Possessing all the stamina, power and durability of its "bigger brothers," the Model 700, according to surveys from the field, has been operating economically and free from road failures.

In a little higher price range and for heavier operations, White features the Models 704, 704K, 705, 709, 710, 712 and 718. Truck operators the nation

over have long played favorites with the Model 704, a ruggedly built truck capable of handling any job dependably and economically. It has a standard wheelbase of 136 in., optional up to 214 in.

Powered by a six-cylinder White engine of 270 cu. in. displacement, the unit boasts a counterweighted, heat-treated seven bearing steel crankshaft, a four-speed transmission, fourth direct. Rated in the 1½-2 ton field, the Model 704 has a single reduction full floating rear axle, with spiral bevel car-

burized and heat-treated alloy steel gears mounted in a dowel supported carrier. It has found favor in every field of transportation because of its power, ability and quality construction.

The other models in this group, with larger engines, have also been favorably received, but have been restricted to limited fields. For instance, contractors have found the powerful Model 710 best-suited for their purposes in dump-truck work. Loggers in the Northwest have paid close attention to the White 709, because of its ability to speed up schedules, get in and out of the fields under its own power.

DIETZ FOG LITES



DIETZ Fog Lites minimize one of the most serious risks of motor truck operation—that of driving at night through fog, falling snow or heavy rain. At such times white headlights not only fail to penetrate but set up violent glare from shattered rays that confuse and blind the driver.

Two safety factors operate in the use of Dietz Fog Lites: 1—low mounting close to the road, permitting lamps to be pointed at angles ahead to light sides of road and approaching curves. 2—Fitted with amber lenses, through which a strong light can be projected with avoidance of the glare produced by white lenses.

Dietz Fog Lites are "quality" lites—good in every detail of construction—modeled and finished to enhance the good looks of any truck or automobile upon which they are mounted. They are supplied in two styles in a variety of finishes and mountings—making them adaptable to all service and price requirements.

No matter how capable your drivers may be, don't let "blind luck" ride in the driver's seat with them any longer. Dietz Fog Lites are **ESSENTIAL FOR SAFETY**. They are durably constructed and not costly. Let your supply dealer send you a pair or two and try them out.

R. E. DIETZ COMPANY, NEW YORK
PIONEER MAKERS OF VEHICLE LAMPS, FOUNDED 1840

HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS
TRUCK FLARES • REAR VISION MIRRORS • FLOOD LIGHTS • CATAPHOTE REFLECTORS • FIRE EXTINGUISHERS

WITH the sudden demand by heavy industries for modernized quality equipment, White came to the front with the now-popular "big three"; the Models 720, 720T and 722, designed especially for heavy-duty labor.

With a standard wheelbase of 134 in., optional to 212 in., the Model 720 has a White six-cylinder engine of 396 cu. in. displacement, seven bearing, heat-treated steel crankshaft, a selective type five-speed transmission. It is rated in the 5-7 ton field. The Model 720T is the tractor-mate of the 720.

Model 722 has a standard wheelbase of 134 in., a White six-cylinder engine of 460 cu. in. displacement, five-speed transmission, and double reduction full-floating rear axle. Well-built and quality tested, the unit has made tremendous gains in the heavy-duty field, in logging, quarry and contractor operations, on long-haul transportation runs.

Another demand by operators for a truck that could operate efficiently and economically on narrow, crowded city streets brought forth the revolutionary White Cab-over-Engine Models 805, 809, 810, 812, and 818. Designed by Sakhnoffsky, the White COE line features short turning radius, short overall length with large loading capacity, more perfect distribution of weight through forward placement of the front axle, air-ventilated and rear opening safety cabs, and accessibility.

The Model 805 is rated in the 1-1½ ton field; the Model 809 in the 1½-3 ton field; Model 810 in the 2-4½ ton field; Model 812 in the 3-5 ton range; Model 818 in the 3-6 ton field. All have the same wheelbase choice of from 97 in. to 193 in. The models feature engines of six cylinders, ranging from 270 to 318 cu. in. displacement. These units have not only answered the demands of operators for a truck to operate in heavily crowded areas, but have proved their ability to handle long-run hauls.

One of the line's most prominent features is the exceptional accessibility (TURN TO PAGE 66, PLEASE)

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NOVEMBER, 1937

GOODRICH CUTS COSTS ON LONG CITY HAULS



Los Angeles City Route Trucks Travel 800,000 Miles Per Year Without a Tire Sidewall Failure

Here's a trucking service that covers the largest urban area in this country. In Los Angeles, the 22 units of Higgins Trucks, Inc., travel 4933 miles of city streets—with every wheel on Goodrich Silvertowns.

Speeding heavy loads of merchandise through dense traffic results in thousands of grinding stops and lunging starts. Stops and starts that punish tire sidewalls. Yet Higgins Trucks cover these tire-torturing routes without a single tire failure.

PERFORMANCE UNEQUALED

Read why P. H. Higgins, president, selected Goodrich Sil-

vertowns for this tough truck tire job.

"Goodrich Triple Protected Silvertowns have given us performance that I do not believe can be equaled by any other make of tire. Our experience has convinced us that Goodrich Tires are actually best in the long run."

And, most important, Mr. Higgins formed his opinion only after comparing Goodrich with many other makes.

There's a reason why hundreds of fleet owners—large and small—have formed this same opinion about Silvertowns—have saved themselves thousands of dollars.

GOODRICH SILVERTOWNS ARE TRIPLE PROTECTED

Here's something you get with Silvertown tires and no other! When engineers discovered that 80% of all premature tire failures occurred in the sidewall, Goodrich developed a new invention to protect this sidewall "Failure Zone." It not only checks a big cause of blow-outs; it also increases tire mileage, reduces costly road delays.

HERE'S HOW TRIPLE PROTECTION WORKS:

1 PLYFLEX—distributes stresses throughout the tire—prevents ply separation—checks local weakness.

2 PLY-LOCK—protects the tire from breaks caused by short plies tearing loose above the bead.

3 100% FULL-FLOATING CORD—eliminates cross cords from all plies—reduces heat in the tire 12%.

COST NO MORE

Although Silvertowns cost more to build, they carry no premium price. With the increased mileage and extra protection you get they actually cost less in the long run.

You can cut your tire costs, increase tire mileage and reduce road delays, without spending *one extra cent*.

Call a Goodrich dealer today. Let him give you current money-saving prices. Or write The B. F. Goodrich Co., Akron, Ohio or Los Angeles, Calif.

Goodrich *Triple Protected* Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

COMMERCIAL CAR JOURNAL
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(CONTINUED FROM PAGE 64)

of the power-plant for inspection and repair. Minor inspection can be made by merely lifting a trap door in the cab floor, exposing the entire engine to view. Major overhaul may be made by sliding the entire power plant as a unit from the front of the chassis after removing the grille.

An increasing demand for tandem drive six-wheel trucks prompted White to introduce the rugged 900 series. Especially well-suited to fields and operations requiring extra power and

stamina, these White 900 Models have won praise for their work in the petroleum fields, on long haul operations and in contracting work.

LATEST unit to be introduced by White is the Model 800 Merchandor; a smartly-styled delivery truck designed specifically for service in the laundry, dry cleaning, department store, bakery, dairy and florist fields.

All of these models, plus numerous others, are offered by White to operators in every field. In addition, there

are the Indiana truck models, White-built by the Indiana Truck Division of The White Motor Co.

WILLYS

(CONTINUED FROM PAGE 37)

out. The only change is the use of a heavier rear spring with eight leaves to carry the increased load. Tire equipment is 5.50 x 16 in., with 3½-in. rims. Body equipment is identical with corresponding half-ton model.

Willys half-tonner units will be built on a special commercial chassis, incorporating the following special features considered essential to vehicles capable of carrying 1000 lb. payload.

New heavy-duty Salisbury rear axle with 4.7 to 1 ratio standard; and 4.9 to 1 and 5.1 to 1, optional.

Greater steering reduction.

Heavy-duty, 10-leaf, "modified" two-stage rear springs of unique design.

Heavier wheels with 4-in. rims to accommodate oversize tires 5.50 x 16 in., standards; 6.00 x 16 in., optional. Larger tire equipment provides road clearance of almost 9 in.

The new commercial units will be powered by the time-proved Willys power plant, four-cylinder, L-head, 3½-in. bore x 4¾-in. stroke, 134 cu. in. displacement, with maximum developed horsepower of 48 at 3200 r.p.m. and torque of 100 lb.-ft. at 1400 to 1900 r.p.m. Pistons are of light weight cast iron, with three compression rings and an oil return ring. Full pressure lubrication system carries an adequate supply of oil at all times to main bearings, connecting rods and camshaft bearings.

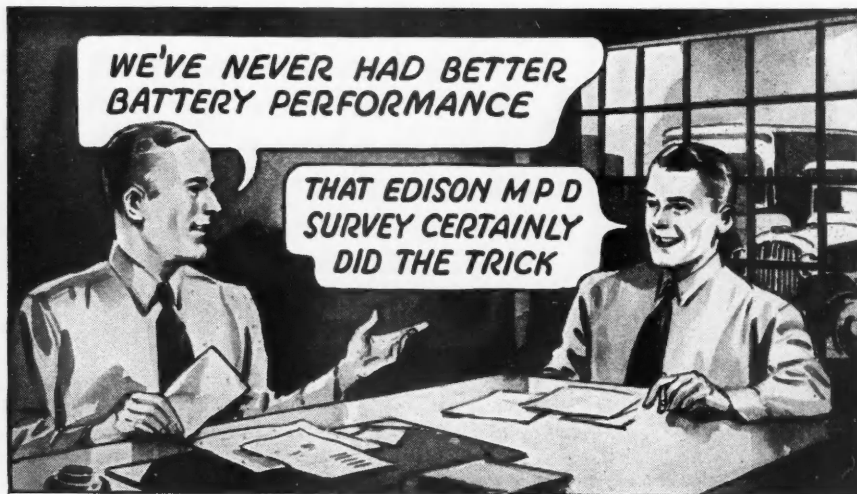
A 13-plate U.S.L. battery is placed in a compartment in the right front fender, where it is easily accessible under the hood. Auto-Lite starting and ignition system is used.

Synchro-mesh helical cut silent gear transmission is used. The main shaft and clutch shaft are mounted on ball bearings. Only 1¼ pt. of lubricant is required to refill the transmission. The clutch release bearing is of the self-lubricating type.

A new type of Gemmer steering gear is used, offering a short turning radius with many advantages in traffic or on narrow country roads. Wheelbase is 100 in.

Bendix Duo-Servo controlled four-wheel brakes are standard.

The initial commercial unit will be built complete with enclosed cab and all-steel pick-up body, 72 in. long, 46½ in. wide and 16 in. high; also an interesting stake body. Several other body types will be available to round out the commercial line.



The EDISON MPD Survey means more Miles-Per-Dollar of your battery budget

It's easy to fall into the habit of merely replacing a worn-out battery with another of exactly the same type. Heretofore, there has been no easy method for determining if another type might cut the miles-per-dollar cost.

The EDISON MPD Survey saves you money by providing such a method. This sensible plan gives you a scientific basis for selecting your batteries according to type of vehicle—amount of service—and specific kind of

service. The EDISON MPD Survey can be made easily and quickly for each unit of your fleet. Experience shows that it means more miles-per-dollar of battery operation.

EDISON Highway Transport Batteries are engineered and built to give dependable service for fleet duty. The MPD Survey makes this service eminently economical as well. Before you buy your next battery, it will be well worth while to look into EDISON.

EDISON HIGHWAY TRANSPORT BATTERIES

THOMAS A. EDISON, Incorporated

Edmark Battery Division, Kearny, N. J.

Thomas A. Edison, Inc.
Edmark Battery Division, Kearny, N. J.

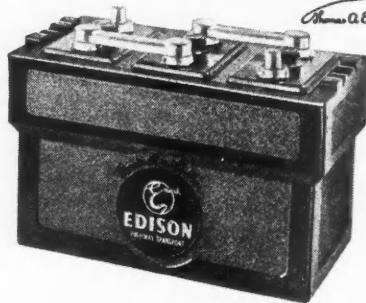
- ☐ We would like to arrange for a free EDISON MPD Survey of our fleet.
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NOVEMBER, 1937

WITH 12 SPEEDS YOU GO

Truck operators are installing Watson-

Brown-Lipe Auxiliary Transmissions to

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FORWARD SPEEDS mean FASTER, MORE

PROFITABLE SCHEDULES. Standard

truck transmissions with 4 or 5 speeds

can't give the correct gear splits to save

road time and handle heavy loads. The

12 forward speeds of the Watson-Brown-

Lipe make it one of the GREATEST

MOTOR TRUCK IMPROVEMENTS . . .

in years!

**ANYWHERE with
ANY LOAD >>>**



"You need
more gears!"

AUXILIARY *WATSON-BROWN-LIPE*
Transmissions H.S. WATSON CO., SAN FRANCISCO & TOLEDO

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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DODGE

(CONTINUED FROM PAGE 27)

as four-bearing crankshaft with large main bearing area, water distributor tube, by-pass thermostat, full-length water jackets, exhaust valve seat inserts, 10-in. clutch with self-lubricating ball bearing clutch release. It also has four-speed transmission, roller bearing universal joints, X-type cross member added to sturdy the chassis, safety-steel cab, extra length in rear springs, seamless one-piece axle housing, large valves and other features. A special oil

bath air cleaner is available as extra equipment.

The Dodge one and one-half-ton truck of 9500 lb. gross rating capacity has a standard rear axle ratio of 5.428 to 1 with dual rear tires and 4.875 to 1 with single rear tires. Hydraulic brakes have large stepped bore wheel cylinders which equalize the wear on the brake shoes. Standard models offered in this size are: Flat-faced cowl, express, cowl with windshield, cab, platform and stake.

The Dodge one and one-half-ton with the 11,500 lb. gross rating capacity has

a 78-hp. engine with a displacement of 228.12 cu. in. Bore and stroke is $3\frac{3}{4}$ x $4\frac{1}{4}$ in. Axle ratios available are 5.66 to 1 and 6.33 to 1. A two-speed rear axle also may be had.

The standard full-floating rear axle has a seamless steel one-piece housing that is expanded at the center for the mounting of the differential carrier assembly and contracted at the outer ends to receive the large wheel bearings. The spring seat is electrically welded to the one-piece housing, after which the entire housing unit is heat treated. This truck is offered in the following models: Flat-faced cowl, cowl with windshield, cab, stake and platform.

The new two-ton model has a gross weight rating of 13,500 lb. and is available in wheelbase lengths of 133 in., 148 in., 159 in., 177 in. and 220 in. Engine has a $3\frac{3}{8}$ -in. bore and $4\frac{1}{2}$ -in. stroke with a piston displacement of 241.5 cu. in. It develops 175 lb. ft. torque and 85 hp. This model has a 11-in. clutch with torsional damper and self-lubricating ball bearing clutch release. Its standard full-floating rear axle is offered in ratios of 5.66 to 1 and 6.33 to 1. A double reduction axle with ratio of 7.35 to 1 and two-speed axles are available as extra equipment.

Hydraulic brakes are booster-operated and drums are 16 in. in diameter and two and one-half in. wide. These booster-actuated brakes with stepped bore wheel cylinders insure safety and plenty of braking power under extreme conditions. Chassis has box-type front cross member and the spring rear member is of the X-type.

Numerous other mechanical features are embodied in this model. They are: Two-bearing design water pump, outside gas lines to reduce possibilities of vapor lock, fuel pump heat shield and chimney, outside gas tank filler tube, large bearing areas on connecting rods, large valves, saddle front fender mountings, spring-cushioned parking brakes with high leverage, large axle shafts with 16 splines which lower the stress of driving torque, clamp-type front bumper mounting, safety instrument panel, large record box, cab insulation which eliminates noise and heat, adjustable seat cushion and back, foot-type dimmer switch and an indicator light inside the cab to show when bright lights are on.

Extra-heavy metal for the cab, hood, body and other places has been adopted.

Dodge will continue to offer three-ton models in standard chassis and body types which will include cab and chassis, cowl with windshield and flat-faced cowl. The popular Dodge four-ton custom-built airflow models will also be continued.



**Model Z6 Hoist
With D6 Body**

Built in 7½ ft. and 8 ft. lengths
and in capacities ranging from
1½ cu. yds. to 3 cu. yds. water
level.

ANTHONY

Leads in Advanced Design

Constant research—exhaustive experimentation—experienced engineers—modern production facilities—a policy of continuous improvement—gives Anthony's products unquestionable superiority.

1. Pipeless Hydraulic Hoist. No pipes or connections to leak.
2. Positive control at any angle by a three way control valve.
3. Boxed type brace FRONT and REAR gives extra strength where needed.
4. 55 degree dumping angle gives cleaner dumping.
5. Lifting Force Compounded where needed—first 25 degrees of lift.
6. Floating Gear non-thrust pump—all bearings outside of pump chamber.
7. Remarkable low oil pressures remain constant throughout piston stroke.
8. Universal Mounting—Interchangeable on various chassis—body never becomes obsolete.

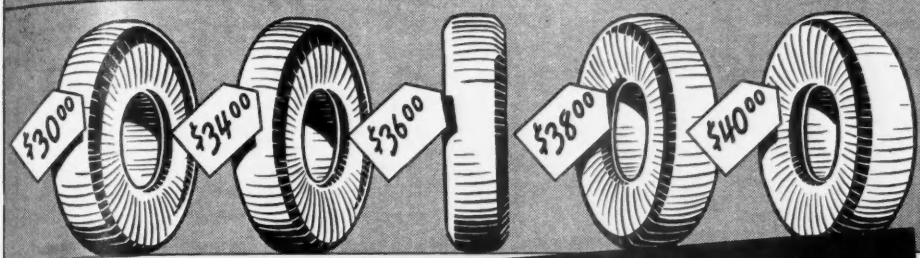
MANUFACTURERS of

A complete line of hydraulic hoists and dump bodies—
from the smallest to the largest for all makes of trucks.

Distributed through 75 leading truck equipment
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It isn't so much the PRICE of the tire..



IT'S THE WORK IT DOES
that's important in buying Truck Tires



● You can never know whether a tire is cheap or expensive until you know how much *work* the tire does for the money you pay. The initial price alone means nothing.

To arrive at a true comparison of costs you must know how far a tire has gone and how many tons or packages it has carried. These "production miles" divided into the purchase price give you the *real* cost of a tire—and this is the only sound way to buy.

General Truck Tires have always been built

stronger—to do their work better—deliver greater mileage and haul more payload.

It costs more to build a General Truck Tire because of the way it is built. Thousands of truck operators know it costs less to use Generals because of the way they perform.

Your local General Tire dealer offers you the benefit of his practical truck tire knowledge. He may be able to reduce your tire costs materially.

THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO

*In Canada—The General Tire and Rubber Co. of Canada, Limited,
Toronto, Ontario*

**THE TRACTION
TREAD**

**THE
HIGHWAY**

**THE COMMERCIAL
DELIVERY**

**THE CLEATED
TRACTOR**

**THE
JUMBO**

**THE
ALL-GRIP**



One of the most complete lines in the business—each tire built to give you more miles for less money

GENERAL TRUCK TIRES

STRONGER—All plies are full plies anchored at the bead—no floating "breaker strips"—every inch and every ounce is there for just one purpose—to produce more miles and a lower cost for you.

COOLER—They flex uniformly without that heat-producing "hinging action" of ordinary breaker-strip tires. Heat kills the life of cords and cuts down the miles in a tire. Generals are *cool*—that's why they run more miles at a lower cost for you.

**"COMPACT RUBBER"
TREADS**

All tires stretch due to fatigue in the fabric, but Generals, having no idle, half-way plies, stretch least of all. The tread is kept compact and compressed against the road—that's why it produces more miles and reduces your cost.

FEDERAL

(CONTINUED FROM PAGE 29)

an easily-visible display. Dash controls have been assembled in a practical grouping at the center of the panel, within the driver's easy reach. At the right is a spacious locked compartment for delivery records and valuables.

A new beauty of the cab interiors is created by the use of a two-tone color combination in contrasting shades carried out in the instrument panel, steering wheel and upholstery. Durable

textile leather seats give ample room or three full-sized persons. A dome light is furnished in the Deluxe cab.

The Deluxe cab, distinguished by a V-type adjustable windshield, designed for wide driving vision, is completely lined with steel. The Standard cab, with steel roof lining, has a wide one-piece slanted adjustable windshield. Both cabs are completely weather-proofed and insulated against engine heat, cold and gas fumes, using heavy insulating material between the roof and headlining as well as on the dash. Under-side of cab seat is steel-sealed.

Flanking the radiator grille are fenders of a deep-crown skirted type. Low running boards are strengthened by deep rounded edges and are equipped with heavy rubber mats. A stout bumper of spring steel protects the grille and fenders.

The new models are powered by a wide range of Hercules truck engines designed exclusively for commercial vehicle use. Features common to all six-cylinder engines powering Federal trucks are 2½-in. seven-bearing crankshafts with electrically hardened bearing surfaces, large full length water jackets, positive gear driven water pumps, force feed lubrication, wide face, silent timing gears, air-cleaners, oil filters and governors. An oil bath air-cleaner is standard on all models with tonnage capacity of 2-3½-tons and upward.

Four-speed transmissions are standard on all models under 3-4½-ton capacity. Models of 3-4½-ton capacity and over have five-speed transmission. The latter equipment is optional on all models of 1½-2½-ton ratings and over.

Large four-wheel hydraulic brakes are standard equipment throughout the Federal line. All units of 2-3½-ton capacity and over are equipped with vacuum power boosters. Rear axles of all new models are Timken full-floating bevel-drive type. Two-speed axles are available as special equipment. Over-size "fish belly" type frames are used in all models. Other important mechanical features are roller bearing universal joints, fore shackled front springs and rubber bushed spring eyes requiring no lubrication. Cast-steel wheels are standard on all models.

MACK

(CONTINUED FROM PAGE 34)

bevel type with three optional ratios of 5.43, 5.86 and 6.33. Mack dual reduction drive is used on the EQ with six ratios ranging from 6.31 to 9.79. Both rear axles employ Hotchkiss drive and are full floating.

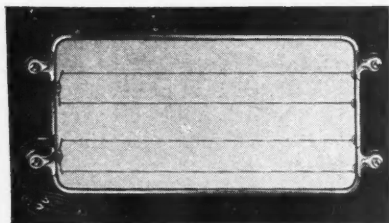
On both of the new models four-wheel brakes are direct mechanical of the internal expanding type and are vacuum booster actuated and on each total foot braking area is 468 sq. in.

Spring suspension is by exclusive Mack rubber Shock Insulation. Houdaille shock absorbers at the front are standard equipment and Mack Archimoid steering gear with a ratio of 18 to 1 provides exceptional steering ease.

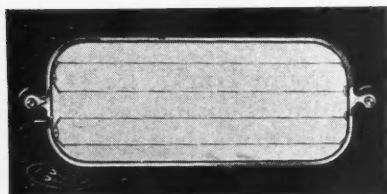
THE most recent addition to the Mack line is the Model EJ, rated at 16,000 lb. gross. It is available in four wheelbases ranging from 146 in.

(TURN TO PAGE 72, PLEASE)

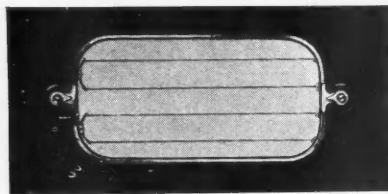
CASCO ELECTRIC DEFROSTERS ARE ABSOLUTE ESSENTIALS TO SAFE WINTER DRIVING. WHEN WINTER APPROACHES, REMEMBER—



No. 4. CHROME FRAME...\$3.50
No. 4-E. ENAMEL FRAME...\$3.00
Glass Size 16" x 8". 4 Heating Wires.



No. 3. CHROME FRAME...\$3.00
No. 3-E. ENAMEL FRAME...\$2.50
Glass Size 16" x 6½". 4 Heating Wires.



No. 2. CHROME FRAME...\$2.00
No. 2-E. ENAMEL FRAME...\$1.75
Glass Size 13" x 6½". 4 Heating Wires.

Order thru your nearest
wholesale house

1. CASCO Defrosters remove ice and sleet at all temperatures. Positive action for absolutely clear vision under all conditions.

2. They DEFROST (prevent condensation on inside of windshield) without use of current. This means economy. The best proven plan is to install your Defrosters on your windshields at the first sign of Winter weather and leave them on till Spring. They DEFROST at all times, and when SLEET starts, just plug in or turn on your Defroster Switch.

NO. 34 FAN RUBBER BLADES



6-volt \$4.15
12-volt 4.40

Keep frost off inside of windshield in winter, fall and spring. Attach to steering post or on header board. Has an efficient, dependable motor, sturdy fan—attractive designed rubber blades. More air velocity—less current used.



CASCO PRODUCTS CORP.

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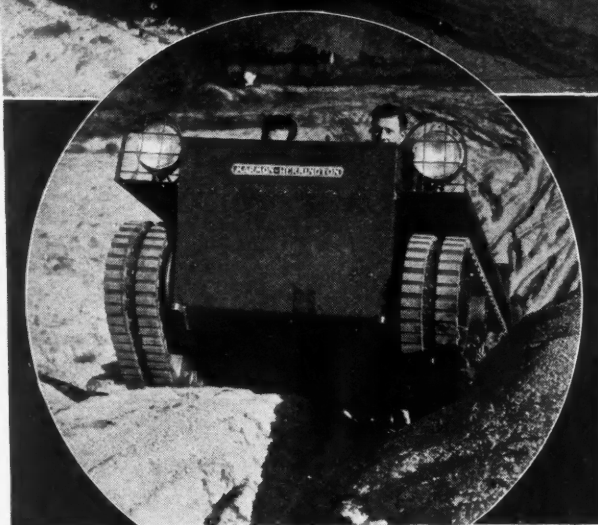
AMAZING
...BUT
True!

...This New TRACK-LAYING TRACTOR

Whizzes down the road at 30 m.p.h.
— goes right through three feet
of water — and pulls like
three elephants!



TRULY amazing are the many feats this entirely new and different MARMON-HERRINGTON TRACK-LAYING TRACTOR is performing. Powered with the famous Ford "85" V-8 motor, it develops almost unbelievable speed and power, with fuel economy of four to five miles per gallon of gas. Climbs steeper grades with ease. Turns "on a dime" at a finger's touch. The newly designed track with track suspension, exclusive with the MARMON-HERRINGTON, combines the greater tractive power, quiet operation and cushioning effect of rubber, with the strength and durability of steel. Track life increased 500%. Payload schedules can't "bog down" — regardless of road or weather — with this new tractor hooked on in front.



MADE BY WORLD'S LEADING *All-Wheel-Drive* ENGINEERS AND MANUFACTURERS

Of course this new and sensational track-laying tractor would be a MARMON-HERRINGTON! For many years this organization has been leading the world in engineering design and manufacture of *extra heavy duty* automotive hauling and delivery equipment. In every country and clime, in every industry and trade, MARMON-HERRINGTON *all-wheel-drive* trucks are making short work of jobs no other automotive vehicle would dare to tackle.

MARMON-HERRINGTON is the fastest growing, fastest selling line of *all-wheel-drive* trucks and trailer tractors in the field. Heavy duty models and *all-wheel-drive* conversions of Ford V-8's in all styles and types. See your nearest Ford dealer or write us.



MARMON-HERRINGTON COMPANY, INC., Factory and General Offices, **INDIANAPOLIS, INDIANA**
★ World's Leading All-Wheel-Drive Engineers and Manufacturers ★

★ MARMON-HERRINGTON *All-Wheel-Drive* TRUCKS

AND THE NEW HIGH-SPEED TRACK-LAYING TRACTOR

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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(CONTINUED FROM PAGE 70)

to 194 in. Three tractor wheelbases are also available ranging from 139 in. to 158 in.

The EJ is powered by a six-cylinder engine with $3\frac{1}{2}$ in. x 5 in. bore and stroke developing 84 hp. at governed speed of 2800 r.p.m.

Drive is from a dry single plate clutch through a five speed unit-with-engine transmission with direct drive in fifth as standard, an overgeared fifth being available at slight extra cost. Final drive on the EJ is of single reduction

spiral bevel type with three available ratios; 4.86, 5.83 and 6.80. At an extra cost there is a choice of two double reduction axles. All rear axles are full floating and employ Hotchkiss drive.

The four-wheel foot brakes of this model are hydraulic and vacuum booster actuated. Braking area is 370 sq. in.

RATED at 18,000 lb. gross is the Model EH introduced by Mack last year, a truck which set sensational sales records. This model is offered in standard wheelbase lengths of 146 in. and 158 in. for the truck and 139 in.

for the tractor chassis. It is powered by a 6-cylinder engine with $3\frac{5}{8}$ in. x 5 in. bore and stroke which develops 79 hp. at governed speed of 2300 r.p.m.

A conventional dry plate clutch connects the engine with the unit-power-plant-mounted, five-speed transmission in which the three top speeds are quiet by virtue of helically toothed gears and individual clutch shift. A three jointed shaft with needle bearing universals drives the rear axle which as standard is of the single reduction type but is also available with double reduction gearing for the slower ratios. Brakes are 4-wheel hydraulics, actuated by vacuum booster and steering gear is of the Mack Archimoid type.



"DOWN TIME" IS A COST FACTOR

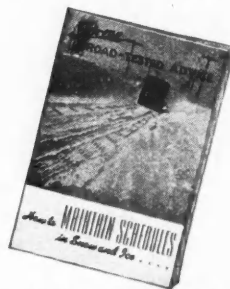
Trucks produce profits only when they are rolling on schedule. Delayed deliveries mean dissatisfied and maybe lost customers.

Tire chains are essential to schedule maintenance during winter months, a big factor in the safe operation of your fleet.

Equip your vehicles with a tire chain that is easy to put on when extra traction is needed and easy to take off when the road's clear. Specify the tire chain that gives you greatest mileage. End frequent changes of cross chains with their resultant loss from "down time." Avoid delayed schedules.

Pyrene Tire Chains have built into them every needed feature for long wear. The Pyrene patented lock means no lost chains and is always "Easy On and Easy Off."

For more mileage and better traction we recommend Pyrene's Doubleduty Chains with Bar-Reinforced traction links. Slightly higher in initial cost, their more than double mileage means lower cost per chain mile—less "down time," maintained schedules and satisfied customers.



Write for Free Booklet, C. T. 1 Road Tested Facts in Winter Driving. How to Cut Your Per Mile Chain Cost.

Pyrene TIRE CHAINS ARE CHEAPER IN THE LONG RUN

Made by the makers of the famous Pyrene Extinguisher and used by leading fleet operators for years.

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Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: Pyrene Manufacturing Company; Pyrene Manufacturing Company of Canada, Ltd.; American Chain Company, Inc.; Hodel Chain Co.; Dominion Chain Company, Ltd.; and the McKay Company.

IN its cab-forward or Traffic Type line of trucks Mack has four well established models, the Models CH and CJ and the smaller editions of these two models, the EC and the EB, all having smoothly streamlined cabs with doors opening ahead of the front fenders. Located between the floor board and the seats, the engine is covered by a double-shelled housing of aluminum heavily insulated on the inside and seating in a felt-filled channel being thus heat tight, sound proof and gas proof. This inclosure is in two parts both of which are easily removable.

ANOTHER recent Mack development is the incorporation of a line of Mack Jr. popular-priced models which complete the Mack line from $\frac{1}{2}$ -ton capacity up to the capacity of the Model EJ and thus enable Mack to offer every possible size and type of truck. The Mack Jr. models are in four sizes, namely, 2M, 11M, 21M, and 31M, and range in gross weight capacity from 4500 lb. to 14,500 lb.

The $\frac{1}{2}$ and $\frac{3}{4}$ ton models are powered with four or six-cylinder engines, the rest of the Mack Jr. line being six-cylindere throughout, with four-speed transmissions in all but the Model 2M, and with single reduction axles in all models. The Jr. line also includes two Traffic Type models and a model designed expressly for door-to-door delivery known as the Route Delivery Truck.

The balance of the Mack line comprises improved and refined continuations of the Models BM and BX in the 6-cylinder shaft driven range; Model AC-4 in the 4-cylinder group and in the intermediate and medium capacities Mack offers the ER, BF and BX with chain drive. For real heavy duty work, chain driven models are available in the AC-4, AC-6, AP, FC and FH.

All Mack models are available as 6-wheelers with two- or four-rear wheel drive.

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A Borg-Warner Product

DON'T LET appearances fool you. The new Borg & Beck clutch looks about the same as ever—but *it's better again.*

It's a case of putting the improvements where they count. Better plate cushioning and stronger integral parts, for example.

These new clutches last longer than ever before.

They operate with greater ease—they're smoother. Incidentally, these are all improvements on virtues that helped make Borg & Beck clutches the standard of the industry.



It took a lot of research and effort to bring them about—but it was worth it. And 2,000,000 future owners of 1938 Borg & Beck equipped new cars will agree.

BORG & BECK DIVISION
BORG-WARNER CORPORATION
 CHICAGO, ILLINOIS

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 NOVEMBER, 1937

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DIAMOND T

(CONTINUED FROM PAGE 25)

cab—barely room for the tire and fender—which results in exceptionally short wheelbases and correspondingly short turning radii, even with unusually long bodies. For example, a full 16-ft. body is carried on a wheelbase of only 132 in. for which the turning radius is approximately 23 ft.

In addition to shorter overall length and the ability to negotiate sharper turns, the new Diamond T cab-over-

engine models offer exceptional riding qualities and ease of handling. This is due to the fact that all models have exceptionally long, soft front springs, with shock absorbers built in as standard equipment. These springs are said to be the longest employed anywhere in the industry in trucks of this type. The special Vee-cab is more than 6 ft. in width and provides exceptional visibility in all directions.

Unusual features of the new cab-over-engine line include the heavy-duty seven-bearing engine with its heat-resistant, precision type, cadmium-

nickel bearings, filtered pressure lubrication, gear-driven front end and independent center-mounted water pump. Throughout the chassis, only proved heavy-duty truck units have been used, including roller-bearing steering gear, large single plate clutch, heavy-duty transmission and needle-bearing universals. Propeller shaft bearing carrier is cushioned in live rubber and all shackles are bushed in live rubber under compression, eliminating metal-to-metal contact and all need for lubrication.

Accessibility is a particular feature of the new cab-over-engine models. The engine cover plate lifts off by loosening of two clamps and exposes the entire top of the engine for servicing air cleaner, carburetor and spark plugs. A removable plate protects each side of the engine and by removing the front tire a mechanic may sit at his work.

For a major overhaul, the engine, radiator, clutch and transmission are withdrawn through the front as a unit. The power-plant is carried in a sub-frame, which not only facilitates convenient handling but stiffens and strengthens the entire front end and assists in maintaining positive alignment. There is a removable plate on the toe-board, which gives ready access to the battery. There is no need to open up the engine to check the oil level, as a duplex gauge on the dash shows the amount of gasoline and the oil level.

Steering wheel position and driver's seat are both adjustable. Cab hardware is die-cast and chrome-plated. Cab seat cushions are of the air-spring type and are finished in pyroxylin material of exceptional durability.

CHEVROLET

(CONTINUED FROM PAGE 23)

conform to the new radiator shell contour.

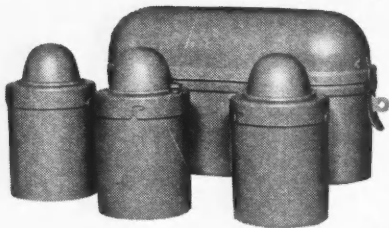
Many design refinements have been made in the cab. An opening through its right side behind the door allows the fuel tank filler neck to project outside. A formed rubber seal round the neck seals the opening. The body half of the door hinge is increased in thickness to 1/4 in. for greater rigidity. A new windshield wiper motor, with knurled control knobs, is recessed flush with the inside surface of the windshield header for greater safety.

The comfort of the driver is considered. On the half-ton, three-quarter-ton and one-ton panel and canopy express bodies, the seat-adjusting mechanism is redesigned for easier operation. Instead of moving on the front sup-

(TURN TO PAGE 76, PLEASE)

SAFETY SIGNALS

for every purpose . . .



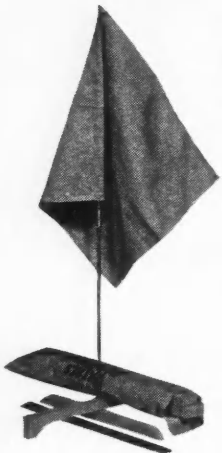
Anthes manufactures a complete line of safety signals designed to meet State and I.C.C. regulations. These units have plenty of eye appeal and are well constructed for rough handling. Look over some of the units shown below, and you will agree that you should have one or more of these items as standard equipment.

ANTHES LEKTROFLAR

These electric flares (illustrated above) use a 6 volt battery and have plenty of candlepower. Each battery has 60-100 hours of burning life. This unit is compact, waterproof and dustproof. It is very durable and rattleproof. Has only 5 major parts.

ANTHES TRUKFLAG

Flag sets with folding bases and collapsing staffs (illustrated at left) neatly carried in canvas bag. Carried in cab and used independently of flares.



ANTHES FUSEES

Anthes Fusees (shown at right) burn full time. Treated to resist moisture and drying. Stand allows mounting on concrete or frozen ground. Eliminates traffic hazard of spikes.



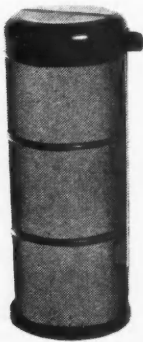
ANTHES FUSEE CASE

The Anthes Fusee Case (shown at left) is a simple, convenient unit which carries fusees and flags. Container detaches from mounting bracket for quick access. Sturdily built and waterproof.



ANTHES MOTOFLAR

The Anthes Motoflar (shown at right) is a sturdy, compact bracket unit. Has improved burner construction and includes flame snuffer—flag mounts, and is thoroughly leakproof and completely rattleproof.



ANTHES FORCE OILER CO.
FT. MADISON, IOWA

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New 1938 CHEVROLET TRUCKS

... the most advanced and complete line of chassis and body equipment ever offered by Chevrolet



featuring

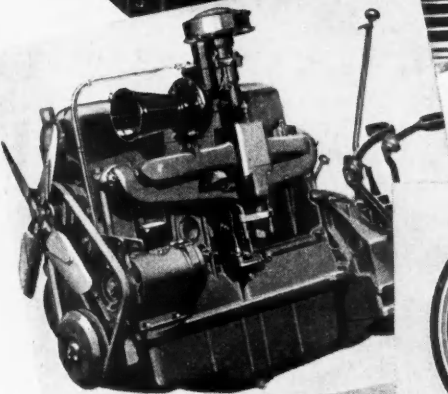
Great power and brilliant performance

Outstanding economy of operation and maintenance

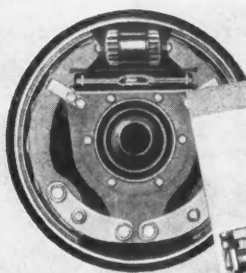
Unmatched durability

Extra long life, new design and construction

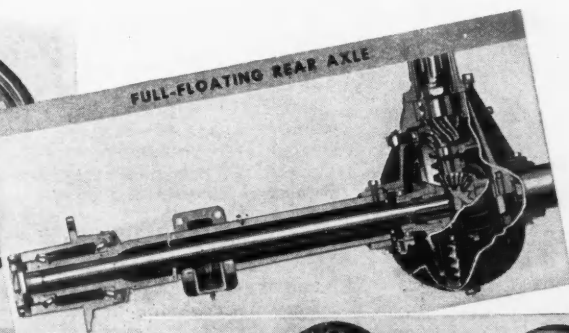
Modern appearance and styling



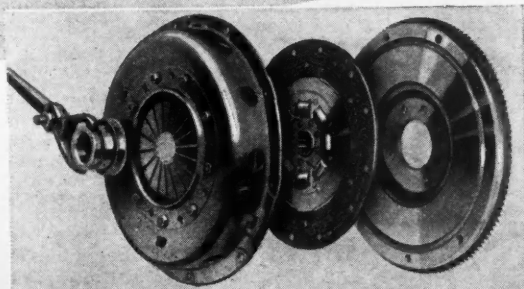
HIGH-COMPRESSION
VALVE-IN-HEAD TRUCK ENGINE



PERFECTED
HYDRAULIC BRAKES



FULL-FLOATING REAR AXLE



HEAVY-DUTY DIAPHRAGM SPRING CLUTCH



THE SYMBOL OF SAVINGS

CHEVROLET MOTOR DIVISION, General Motors Sales Corporation
DETROIT, MICHIGAN

"THRIFT CARRIERS FOR THE NATION"

More power per gallon • Lower cost per load

(CONTINUED FROM PAGE 74)

ports as in 1937, the seat now slides on channels. The same type seat is used on corresponding body types of the one-and-a-half-ton truck but seat adjustment is by a thumb-screw.

THE same engine that was so effective in 1937 is continued for 1938. In it are incorporated improvements making for greater smoothness, economy, durability and quick starting.

To carry torque smoothly and efficiently, an entirely new high-capacity

clutch is presented for 1938. It uses a diaphragm principle never before adapted to automotive or truck needs. Its central unit is a heavy steel "dished" diaphragm with 18 tapering fingers pointing inward from the rim. The latter is held firmly against the clutch driving disk by the "spring" of the tapering steel fingers when the clutch is in engaged position, but is withdrawn from contact with it when pressure on the clutch pedal is communicated to the fingers by the throw-out bearing. Two steel rings, one on either face of the disk, serve as ful-

crums on which the disk pivots as the clutch action takes place.

The new clutch release bearing is the ball thrust type, packed with grease and sealed so as to need no further attention. It is mounted on a tube integral with, and extending from, the clutch gear bearing retainer. The clutch fork is a sturdy forging.

Hydraulic brakes of the internal-expanding type, with double-articulated brake shoes assuring full and even contact, are standard equipment on all Chevrolet trucks.

On all cab type trucks the filler neck emerges from the end of the riser while on the one-and-a-half-ton single unit body trucks, the filler neck projects from the side of the riser. In both cases, the filler neck extends outside the body. Where it goes through the body panel, a molded rubber grommet seals the clearance hole and prevents spilled gasoline from entering the cab or body.

In all fuel tank installations, a flexible, synthetic rubber coupling, impervious to gasoline, is used on the filler necks to relieve the soldered filler neck to tank joint of any stresses.

INTERNATIONAL

(CONTINUED FROM PAGE 31)

of standard length bodies of stock sizes. Front axles are set back, and this together with the relocation of rear axles and cabs, contributes to greatly improved load distribution, not only of body and payload but of gross weight as well.

Wheelbases, in conjunction with correct cab-to-rear-axle dimensions, are available to accommodate all lengths of bodies, with the ideal conditions resulting from the use of bodies in even foot lengths. At the same time, bodies in odd foot lengths will permit satisfactory mounting and load distribution on either the next shorter or longer wheelbase.

Many decided improvements and new features of design and construction are incorporated in the engines of the International models. Every feature was fully tested and proved before production and all have proved in actual service to contribute greatly to performance, greater power, and economy.

ALL engines are designed and built for truck service. They are heavy-duty power plants that deliver maximum performance at low cost. The types FA and FB valve-in-head engines which power the two-ton and larger Internationals have replaceable cylinders;

(TURN TO PAGE 78, PLEASE)

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

AUTOPULSE

ELECTRIC FUEL PUMP

FOR UNINTERRUPTED SCHEDULES

AND GREATER FUEL ECONOMY



Most miles for your fuel gallonage—and no more fuel supply failures—how vital these points are! Read how, on your own jobs, Autopulse can begin saving and earning dollars for you:

● AUTOPULSE MEANS ECONOMY

Mounted away from the motor, it supplies COOL fuel while camshaft pumps, being mounted on the motor, deliver fuel so heated, that a large percent passes out through the carburetor vent in the form of vapor and is wasted. In hot weather every tenth gallon may be wasted—think of that loss!

● CURES VAPOR LOCK

Vapor lock, common with engine mounted pumps because they suck bubbles when heat boils the gas, is unknown with Autopulse, since it can be mounted in a cool spot where it pushes fuel in a solid stream.

● INSTANT PRIMING

Autopulse fills the carburetor the instant the ignition is turned on. There is no repeated use of the starter or drain on the battery by forcing the motor to pump its own gas. Quick starting is assured even in zero weather.

● EXCLUSIVE MULTIPLE ADVANTAGES

With Autopulse Multiple Hookups, the failure of one pump does not affect the others—you always get in under your own power.

● IDEAL FOR DUAL USE

Expensive towing and costly delays due to failure of the fuel feed system can be avoided by using Autopulse as an additional pump where an engine is already pump equipped. Instructions shipped with every pump.

● EXCHANGE AND REPAIR SCHEDULE

Permits new pump purchases at a saving with turn-in of vacuum tank, mechanical pump, or ANY type Autopulse or purchase of factory rebuilt pump with new pump guarantee.

AUTOPULSE CORPORATION
DETROIT • MICHIGAN

When writing to advertisers please mention Commercial Car Journal

WHEN YOU BUY *Truck Chains*, YOU WANT THESE 3 ASSURANCES:

Long Wear

Every type of McKay Truck Chain is built for long wear, but, FOR THE LOWEST COST PER MILE, use McKay Multi-Grip! This is the *only* bar-reinforced truck chain with DOUBLE reinforcing bars. Result—super wear, super traction. • More mileage is built into McKay Truck Chains than any other make. This is constantly checked by McKay Laboratories . . . in the McKay Torture Pit . . . by McKay Road Tests . . . and by the actual experience and tests of large fleet owners.

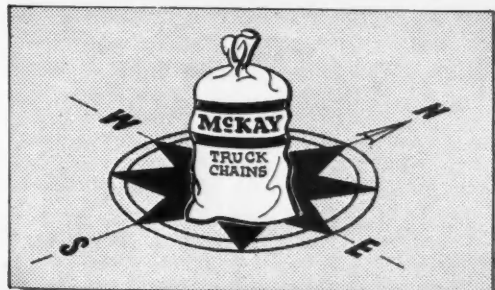
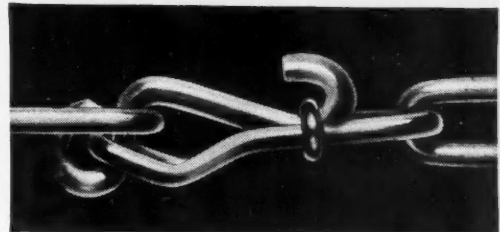
Speedy Fastener

THE KLIP-LOCK WILL SAVE YOUR OPERATORS' TIME! McKay's Klip-Lock Fastener is unlike any other. It's much quicker to open and to close. Anybody can close it . . . doesn't stick or jam . . . doesn't clog, freeze, or rust shut . . . locks Chains on tight . . . unfastens with one hand.

Jobbers Everywhere

McKAY TRUCK CHAINS ARE NATIONALLY DISTRIBUTED! Stocks are carried in practically every Jobbing center in the United States. These Jobbers are backed up by warehouses strategically located in every section, from which Fleet Owners can get quick deliveries under weather stress.

THE MCKAY COMPANY, MCKAY BLDG., PITTSBURGH, PA.



Buy THEM FROM
YOUR MCKAY JOBBER!

MCKAY TRUCK CHAINS

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: The McKay Company; American Chain & Cable Co., Inc.; The Hodell Chain Co.; Pyrene Mfg. Co.; Dominion Chain Co., Ltd.; and Pyrene Mfg. Co. of Canada, Ltd.

(CONTINUED FROM PAGE 76)

counterbalanced, vibration-dampened crankshafts; full-pressure lubrication; precision-type, replaceable-shell, main and connecting-rod bearings; hardened exhaust-valve seat inserts; downdraft carburetion; scientifically designed manifolds; oil-bath air cleaners; air-cooled generators; and other outstanding features which provide maximum power, unexcelled performance, long life, and economy.

The HD type "L"-head engines, which power the half-ton and three-quarter-ton models, have a displace-

ment of 213 cu. in. and the engine in the one-and-one-half-ton models has a displacement of 232 cu. in. These sturdy, dependable power plants have many of the features of the larger engines including counterbalanced crankshafts, replaceable-shell bearings, full-pressure lubrication, hardened exhaust-valve seat inserts, downdraft carburetion, mechanical fuel pumps, and oil bath air cleaners.

Easy handling, safety at all speeds, and sturdy, responsive steering mechanism are especially important in truck operation. In the design of these trucks

attention has been given to steering and its relation to safety and easy handling. As a result, these models, due to wide-tread front axles, improved construction, more effective turning ratios, and larger steering wheel diameters, assure exceptional maneuverability and safety at low speed in traffic and high speed on the open highway.

ALL models have deep, heavy frames and especially efficient braking systems. Clutch and transmission torque capacities have been increased to match the greater torque of the engines. Helical-gear transmissions, with direct fourth speed and fuel-saving overdrive in fifth, provided in the larger models offer outstanding advantages, especially in long-distance hauling. The operator is able with this type of construction to maintain high speed with reduced engine speed and with a consequent saving in fuel and oil and reduced engine wear.

Hydraulic brakes are standard equipment on all models from the light-delivery units to the 4 to 5-ton double-reduction-drive Model DR-60. These internal-expanding, self-energizing, two-shoe hydraulic brakes provide maximum stopping ability for heavy loads. Standard equipment on the larger units includes factory-installed booster brakes of the vacuum-suspended type. Air brakes are standard equipment on the Model DR-70 and the larger six-wheel units. They are available on the medium heavy-duty models, if desired.

Other quality features of design include full-floating rear axles (except in the half-ton models); roller-bearing, anti-friction-type universal joints; self-aligning propeller-shaft center bearings in the long wheelbase chassis; and many others.

SAFETY, long life, attractive appearance, and driving comfort and convenience are highlights in all-steel cab design. These cabs, because of the welded, all-steel construction, offer the utmost in protection for the driver. Ample room, scientifically designed seat and back cushions, insulation against the elements, and provision for proper ventilation contribute to driving comfort under all weather and road conditions.

From sloping, V-type, ventilating windshield to the gracefully designed rear, de luxe panel bodies present an unusually attractive appearance. The trim, sweeping lines are further enhanced by a pressed-in belt molding which constitutes the only trim. Designed for efficient loading, these maximum-capacity bodies are available in a choice of attractive colors.

ARROW LEGALLY APPROVED SAFETY DEVICES

Fleet operators are choosing Arrow signals—not just to meet the law—but to add permanent safety to their trips. Sturdily made, severely tested, thoroughly proved, they defy rain, dust, and vibration.

Approved by the Underwriter's Laboratories, Chicago, approval No. 1320.

Endorsed by many of the Foremost Insurance Companies.

DIRECTIONAL SIGNALS

MARKER LIGHTS

SAFETY FLARES

DRIVING LAMPS

**ARROW SAFETY
DEVICE COMPANY, INC.**

MEDFORD, NEW JERSEY

*ask your
Jobber*

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

Announcing the New "Big Bogie" ★ H-30

Now Thornton makes **BIG BRUTES** out of **ALL TRUCKS** up to 3-ton rating



If you want the low first-cost and economy of a light truck, but find that the single driving axle does not meet your requirements for payloads, speeds and traction—*get the facts about Thornton!*

Thornton does more than add another rear axle—*Thornton delivers DRIVE to all four rear wheels*—makes big brutes out of light trucks—lets you haul loads 2 to 3 times larger—*EASIER, FASTER, CHEAPER.*

You've heard about the Thornton AF and AC Models for use with *standard* truck rear axles.

Now, with the New "Big Bogie," and *special heavy-duty axles*, the gross vehicle weight of any truck of 1½- to 3-ton rating can safely be increased to 30,000 pounds. As a tractor, the H-30 unit will handle capacities up to 50,000 pounds gross, providing that horsepower and motor torque are adequate.

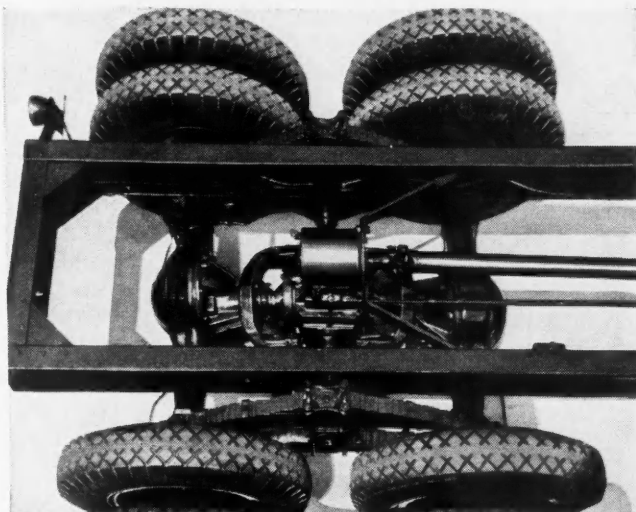
Before you buy that next truck, discuss your hauling problems with a Thornton representative.

THORNTON TANDEM COMPANY

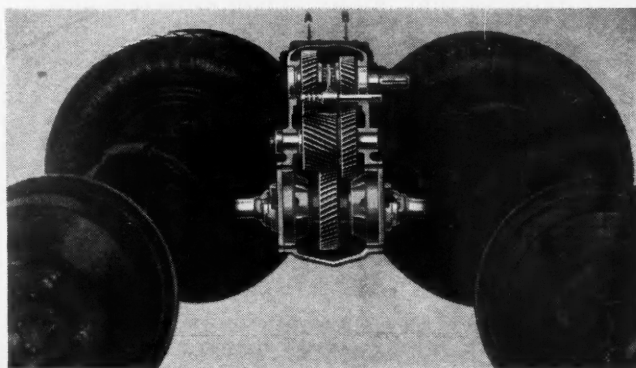
5174 Braden Street, Detroit, Michigan

Distributors in all important distributing points in the United States

SEE US AT THE NEWARK SHOW • SPACE 30



★ Illustrations show how the Thornton Transfer Case, containing dual ratio transmission, is located midway between two heavy-duty rear driving axles, supported by trunnion tubes to frame brackets. Two high-angular universal joints directly connect the Thornton transmission with the pinion shafts of both axles. Two torque yokes, bolted to the axles and pivoted from the case, absorb all driving and braking torque reactions. Massive, heavy-duty dual spring assemblies, mounted on trunnion tube ends, cradle the load by walking-beam action under all conditions.



THORNTON

FOUR REAR WHEEL DRIVE

AUTOCAR

(CONTINUED FROM PAGE 21)

need a modern truck of extremely short wheelbase.

This extremely short wheelbase has also disclosed that it lends itself, with unforeseen effectiveness, to the requirements of people who wish to develop streamlined vehicles for publicity purposes.

Another interesting and quite recent development in connection with the

Cab-Forward Autocars is their 6-man cab, which was developed for those models in order to meet the needs of public utilities who desired a compact vehicle that would have comfortable and enclosed seating capacity for a full crew of line-maintenance men, and body capacity for all their essential tools and supplies. This presented an intricate problem in design in order to incorporate in the cab not only the essential seating capacity for a crew of men, but also other details which the experience of the utilities had indicated to be

necessary. As designed by Autocar, the 6-man cab has an adjustable front seat, two doors on the right, one door on the left, one large window on the left, 3 30-in. adjustable rear window, and a Western Electric adjustable cabscope on the roof. All of this had to be developed inside the most compact possible space without crowding too much the seating capacity for the men, because the chassis has to carry a propeller shaft power takeoff and double drum winch, both of which are controlled from the driver's seat.

In spite of the emphasis which Autocar advertising has appeared to place on their light duty jobs in the recent past, the Autocar Company continues to be primarily a manufacturer of heavy duty trucks, and that is the attitude of Autocar executives in reference to 1938. In this connection, of course, Autocar is not neglecting the Diesel applications which have developed through 1937 an increasing momentum.

The large number of Autocar-Diesels now operating on the West Coast, under greatly varying conditions, are giving Autocar engineers the best possible opportunities to keep completely informed on all details of Diesel performance. Autocar is maintaining an entirely neutral attitude as between Diesel and gas engines, and is making no effort to push one against the other. Autocar has no immediate intention of developing a Diesel engine of its own.

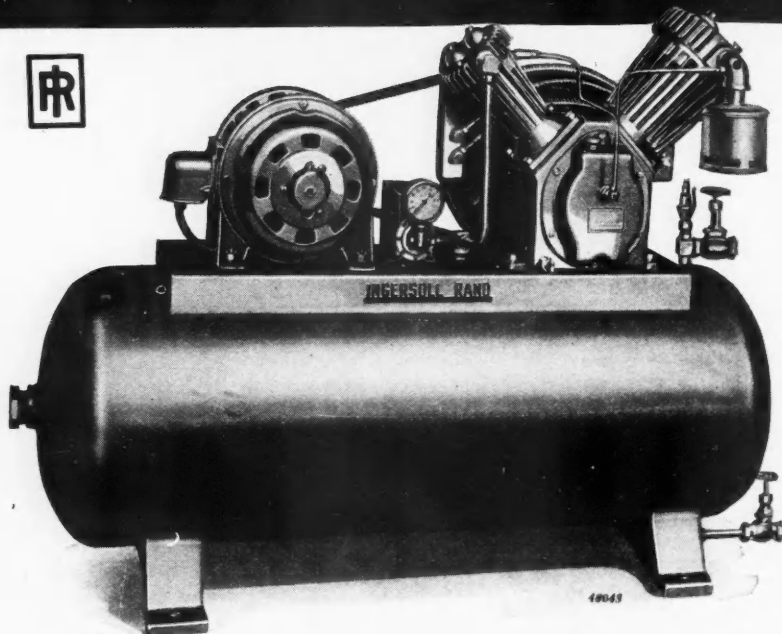
The Autocar trucks, in both their short-wheelbase designs, have so much eye appeal and lend themselves readily to new and interesting developments. But, as a matter of fact, Autocars of conventional design and in all capacities still predominate in volume and undoubtedly will continue to during 1938. Concentration on the development of new short-wheelbase models has not caused Autocar to lose interest in their line of Conventional trucks, which were entirely redesigned early in 1937, and are more likely to be redesigned, especially with reference to external appearance, in 1938, than may be the case with the short-wheelbase Autocars which have modern exterior appearance.

Official Guide

ELEVENTH Edition, "Official Motor Freight Guide," incorporates many added features. By means of a new routing index combined with a trucking center map, the routing of shipments to any point in the country, via truck lines, is much simplified. Three thousand new names and addresses have been added, and the truck line schedules introduced in the 10th Edition have been retained. Further details may be obtained from Official Motor Freight Guide, 732 W. Van Buren St., Chicago, Ill.

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

How Much Did Your Compressor Cost Last Year?



Many owners of I-R Compressors don't spend a cent a year on servicing them. That's not unusual, because I-R Compressors are built to take tough work as a steady diet. 65 years of building good machines have shown us how to do it.

Type 30 Two-Stage Compress-

sors, for example, are rated at 200 lbs. pressure on continuous service and can handle any kind of air operated shop equipment you want to use. There is a size to suit your shop— $\frac{1}{4}$ to 15 hp.

An I-R compressor will stay on the job and help you make more profits.

Ingersoll-Rand

11 BROADWAY, NEW YORK CITY

523-3

When writing to advertisers please mention Commercial Car Journal

Yesterday's Battery won't do in Today's Vehicle

CUT YOUR COSTS WITH THE NEW DUAL RUBBER **Willards**

● Ten years ago, 300-watts output answered the electrical requirements of the average bus. Today the figure—and it continues to increase—is not far short of 1000 watts.

Here's a new problem in rising maintenance costs—yesterday's standards of performance and yesterday's battery *won't get by*.

Willard, keeping pace with fast-moving transportation developments, has developed the Dual Rubber Battery, an exclusive Willard product that is winning wide acclaim from operators everywhere.

Here is a battery built to meet today's needs in any type of commercial operation. It has greater stamina, longer life and most important of all to you—the ability to lower maintenance costs.

You can prove the outstanding performance of Willards to your own satisfaction. Arrange for an actual test by writing the Truck and Bus Department, Willard Storage Battery Company, Cleveland, Ohio.

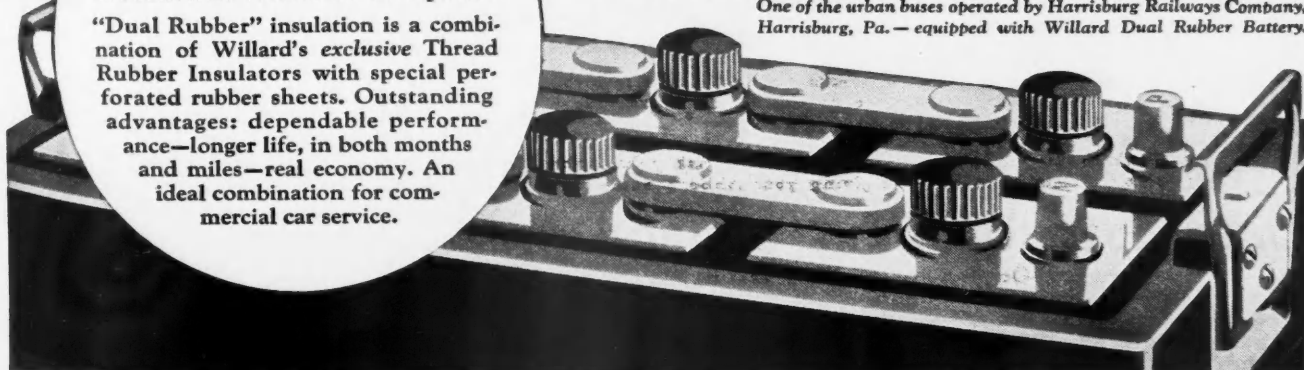


One of the urban buses operated by Harrisburg Railways Company, Harrisburg, Pa.—equipped with Willard Dual Rubber Battery.

What is **"DUAL RUBBER" INSULATION?**

It's Another Willard Development

"Dual Rubber" insulation is a combination of Willard's exclusive Thread Rubber Insulators with special perforated rubber sheets. Outstanding advantages: dependable performance—longer life, in both months and miles—real economy. An ideal combination for commercial car service.



TRAILERS

(CONTINUED FROM PAGE 41)

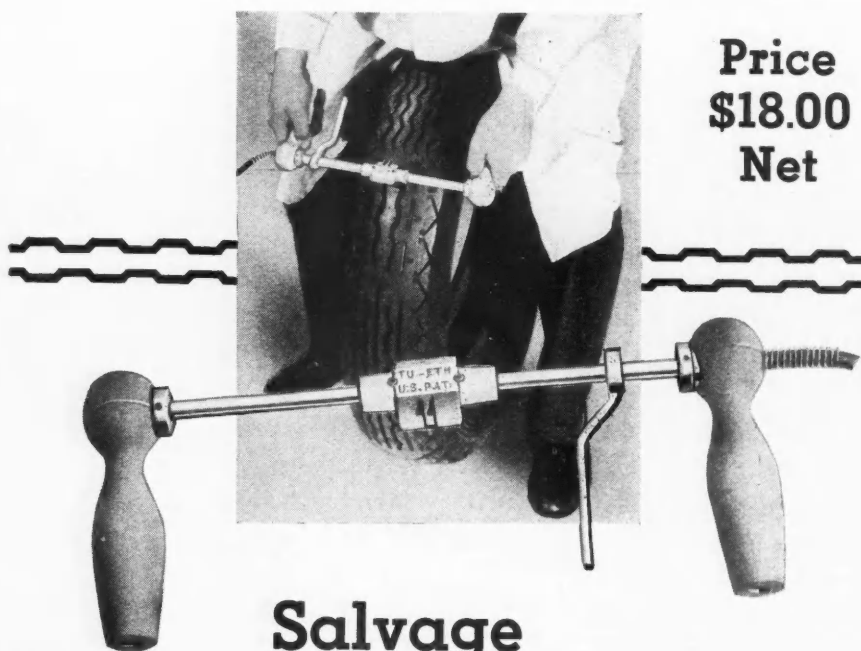
The interior is completely lined with Douglas fir veneer, and the top is a one-piece metal crown with insulated center section, so that some degree of protection from temperature is provided even without full insulation. An exclusive feature is the Highway theft-proof flush type door hardware. By maintaining constant pressure against the door gimps, regardless of wear at the lock plunger or catches, it guar-

antees adequate sealing against dust and weather.

Another interesting Highway feature is the metal-faced rubrail, integral with the extended body stakes that gives ample protection to the skirting. At the rear is a full length all-steel bumper.

These two new standardized bodies are in continuous production and are available for immediate delivery. According to the manufacturers, they are priced on a basis of line production even with the many optional features.

THE TRAILER CO. OF AMERICA.



**Price
\$18.00
Net**

Salvage Mileage and Traction with TU-ETH *Electric* REGROOVER

You know what you pay for truck tires. Why call them worn when 40% of the tread rubber still remains? Fleet operators all over the country are salvaging this built-in mileage and traction (which means safety), by regrooving with TU-ETH before tires are completely bald. You can do the same—and make the same savings. Tool operates efficiently with wheel mounted or dismounted, tire inflated or uninflated.

**"We have found TU-ETH
Tool to be the most satisfactory"**

Thus writes a TU-ETH user, who has tried other tools and found TU-ETH best. There are many more.

TU-ETH is a well-constructed tool—adjustable for all size tires—easy in operation—doesn't require an expert—any man in your shop can use it. Regrooving time about 10 minutes.

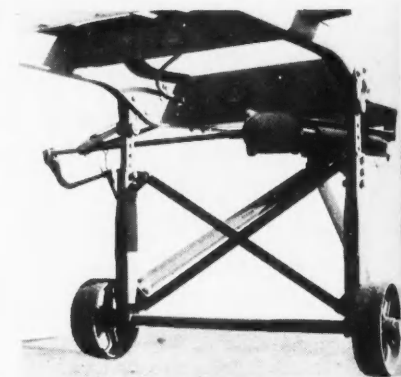
Start making tire savings now—with TU-ETH. Ask your jobber for complete details; or write us giving your jobber's name.

VANDERBILT-OSBORNE CORPORATION
Raymond-Commerce Building, Newark, N. J.

Cincinnati, Ohio, has developed several new pieces of equipment for trailers. As a protection against careless driving, the company has designed a new bumper (illustrated). The bumper pad exposed is of heavy construction to take the shock and transmit it to a rubber block enclosed in the bumper housing. Much of the shock is absorbed in the rubber bumper and damage is not transmitted to the body and frame.

A new type of lower fifth wheel with power control for the Lapeer automatic trailer has also been developed by Trailmobile.

A large size king-pin is equipped with a push rod in the center which operates the brakes. The entire load pulling assembly is mounted in a heavy housing blocked with rubber instead of springs, removing all strain and shock of starting and stopping, connecting and disconnecting from the cab and the driver. On tests under actual operating conditions the driver, without leaving his cab, was able to back up and park a loaded trailer, connect up to a second trailer and pull it away in not more than 60 seconds.



Among improvements in trailer design recently announced by the Trailer Co. of America, Cincinnati, is the new Trailmobile prop leg assembly illustrated above. It is absolutely rigid and capable of sustaining far more than the rated load capacity of the trailer. The extension part of the leg is bolted with three bolts passing through the outside housing as well as the center shaft. This is said to eliminate the possibility of shearing bolt heads due to unevenly balanced load conditions.

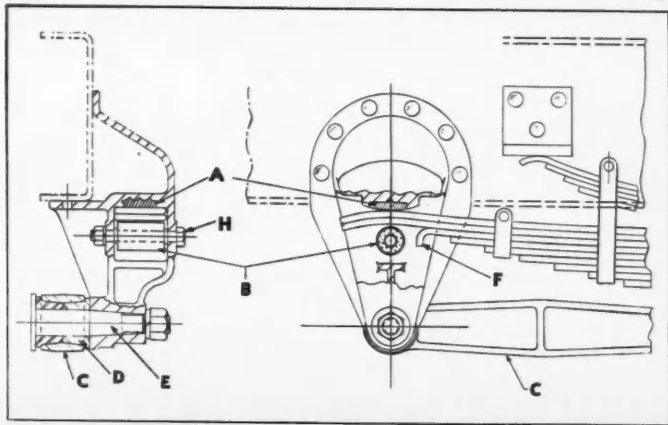
THE KINGHAM TRAILER CO. Louisville, Ky., one of the first companies to offer for sale an all-steel trailer body, has been continually improving this type of construction. Two years ago a new all-steel, die-formed, sectional body was made available. This body was so designed that the steel understructure, the side panels and roof sheets could be assembled in various lengths made up of 2-ft. sections, bolted together forming a weather-proof lock joint at each section. Available in both open and closed vans for either

(TURN TO PAGE 85, PLEASE)

TRAILERS

(CONTINUED FROM PAGE 82)

Important safety features found in the construction of the new Gramm trailer are illustrated by the detail diagram of radius rod and spring end assembly reproduced at the right. Referring to letters in the diagram: A. cast alloy hardened insert to prevent wear on spring hanger, B. rubber rebound tube to check braking reaction, C. cast I-beam section radius rod, D. tapered compressed rubber radius rod bushings, E. pin assembly to compress rubber bushings, F. safety third leaf end to prevent spring slipping from hanger should radius rod fail, H. bolt supporting rebound tube



a straight floor or 14-inch drop floor, this 70 series steel van body fills practically every requirement of the average trucker.

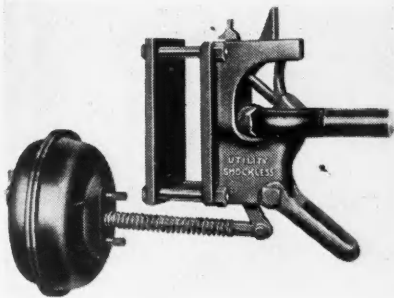
This body is furnished in a standard width of 86 inches inside between slats and 95½ inches outside over the rub rails. The inside height on a standard straight floor body is 6 feet 2 inches under the bow at the side panels, and 6 feet 8½ inches under the bow in the center. On a 14-inch drop frame this inside height is increased by 14 inches behind the drop.

The 70-S body is furnished in a new inside height of 7 feet 1 inch at the side panel and 7 feet 7 inches in the center under the bow. The overall length and width are the same as on the standard 70 body. Both the standard 70 and the 70-S bodies are equipped with lights meeting the I.C.C. requirements. The new deluxe nose with the wings is a standard feature.

From a service angle the die-formed body has many features over the regular custom-built body. When a panel becomes damaged it is necessary only to unbolt and replace with a new panel.

This body can be insulated, as well as refrigerated.

When sold as an open top van it is naturally equipped with ridge pole and bows and tarp tie downs, in place of the roof.



A new shockless full trailer hook, recently developed by the Utility Trailer Mfg. Co., Los Angeles, Calif., is illustrated above. No special trailer tongue is required for this hook is of standard pintle hook dimensions. This is particularly important both from the standpoint of weight and economy. The unit is so designed that either vacuum, compressed air or simple spring power may be used as the shock absorbing medium. Users report excellent results with both loaded and unloaded trailers

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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Football - NEW CARS - sure indications of Fall. And for the successful performance of either - PROTECTION is vital.

In football, there is the all-important man on the offense who protects the ball carrier, who blocks out trouble, who SMOOTHS the way.

In car operation, it is "dag" colloidal graphite, with its teammate oil, which is on the offense against wear and friction. Forming self-lubricating graphoid surfaces on engine

friction parts, "dag" colloidal graphite smooths the way for oil. It protects the metal parts during moments of extreme temperature and pressure and aids in the maintaining of full film lubrication.

Ask your oil supplier about his colloidal-graphited oils today and write us for our descriptive booklet 500 giving in detail data concerning "dag" colloidal graphite.

ACHESON COLLOIDS CORPORATION
PORT HURON, MICHIGAN

dag
COLLOIDAL PRODUCTS

COLLOIDAL GRAPHITE

DAG COLLOIDAL GRAPHITE IS A 100% AMERICAN MADE MATERIAL

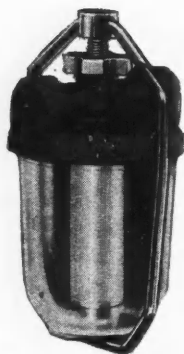
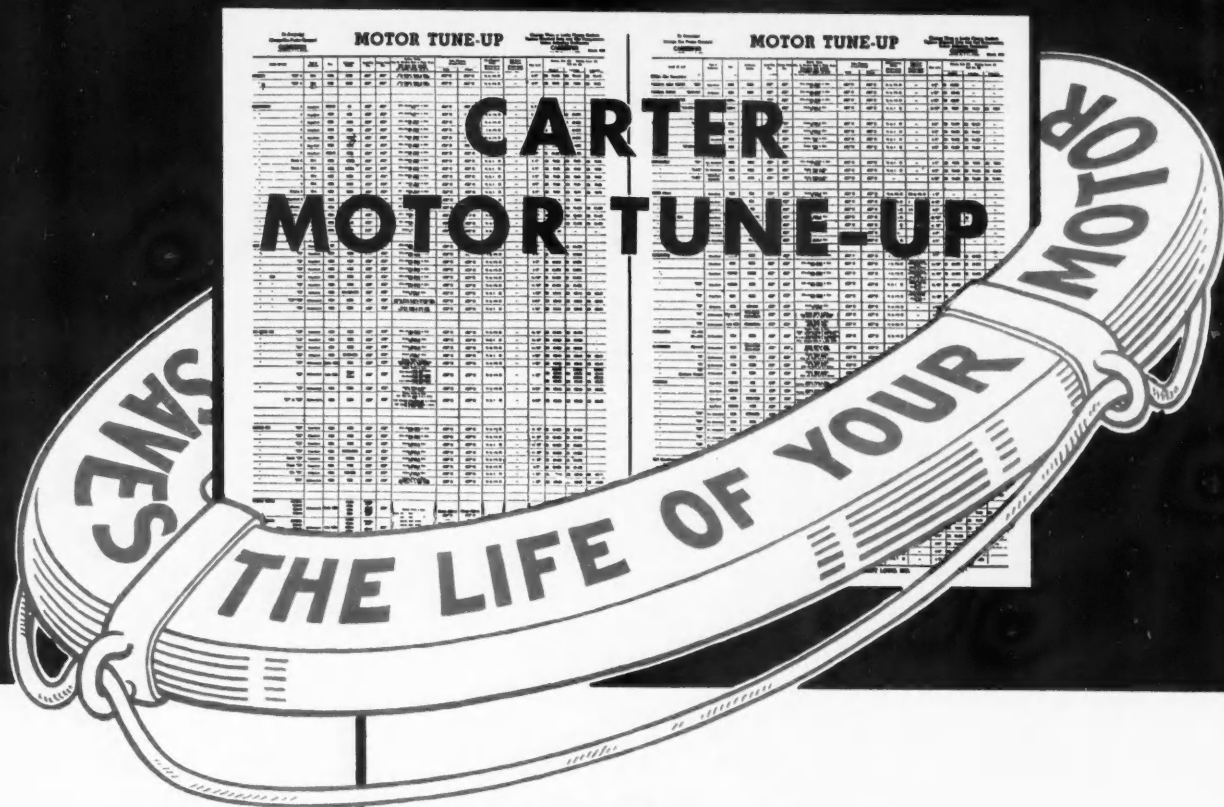
ACHESON COLLOIDS CORP., PORT HURON, MICH.

Please send gratis, story on "dag" Colloidal Graphite.

NAME

ADDRESS

FLEET OWNERS



another protection for
your motors — the
CARTER AIRDOME FUEL FILTER

Scientifically designed by the industry's leading carburetor engineers to provide an improved method of filtration. Two and one-half times the usual filtering area; specially designed head prevents warpage or distortion; top thumb-nut clamp makes it easy to remove bowl for cleaning.
List Price, \$1.50



Division of American Car
and Foundry Company.



NO OTHER service saves you as much money in operating costs as an accurate Motor Tune-Up at regular intervals. And economy is not all—for regular Tune-Up keeps your motors at peak performance at all times.

To make this service fast, easy and accurate we have prepared a special wall chart giving complete tune-up specifications for all Carter-equipped cars and trucks.

A copy of this handy chart is yours for the asking. Be sure to tell us the make and models of the cars in your fleet.

CARTER CARBURETOR CORPORATION
2834-56 N. Spring Avenue, St. Louis, Mo.

CARBURETOR

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

PARTS · ASSEMBLIES · MOTORS Cleaned Quicker · At Less Cost-

WITH LEMPCO SOLVENT VAPOR

DE-GREAS-O

Cleaning parts, assemblies and engines the "De-Greas-O" way is the No. 1 short cut to economical maintenance. The "De-Greas-O" cleans thoroughly, saves time, cuts costs, and quickly reveals hidden defects.

Small pieces can be thoroughly cleaned and dried in 1½ to 3 minutes; large cylinder blocks require only 7 to 10 minutes.

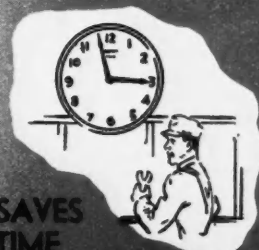
Don't let old and extravagant cleaning methods slow down simple repair jobs, delay inspections, and consume hours of labor when a "De-Greas-O" can do the same work quicker and at less cost!

The "De-Greas-O" cleans all parts, all sizes, all metals—and you can watch the efficient, low cost performance right in your own shop. Your inquiry will bring a "De-Greas-O" demonstration—or a copy of money-saving degreasing facts — without obligations to you.



CLEANS THOROUGHLY

De-Greas-O vapors quickly reach the most hidden recesses, crevices or fractures.



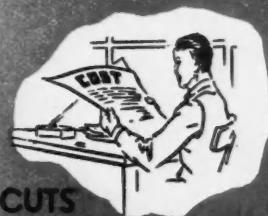
SAVES TIME

De-Greas-O cleans cylinder blocks and other large parts in 7 to 10 minutes.



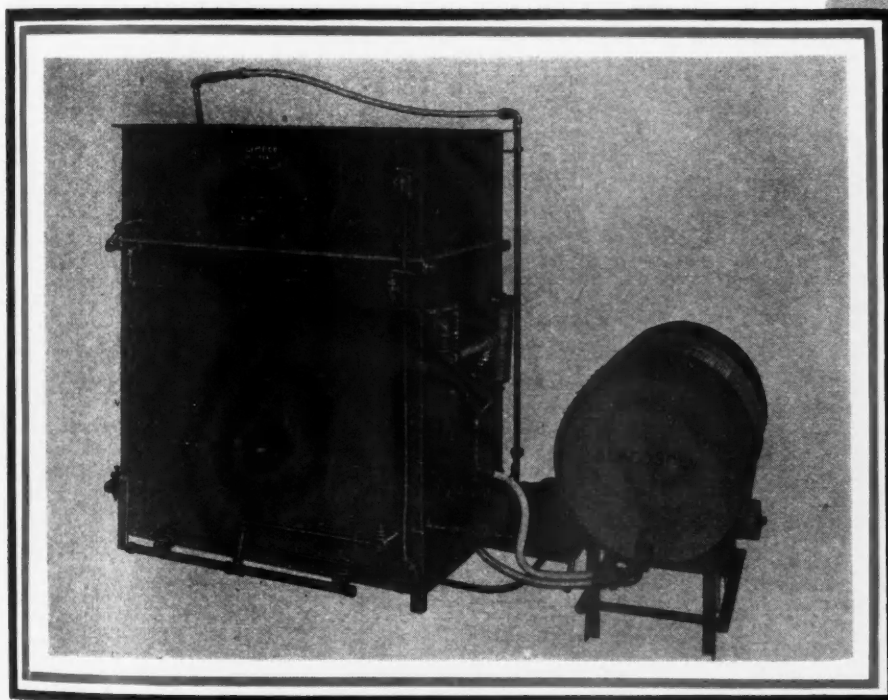
SHOWS DEFECTS

Thorough degreasing reveals defects enabling replacement and obviating future repairs.



CUTS COSTS

Solvent vapor degreasing saves man power, speeds repair work and cuts labor costs.



BRAKE DRUM TURNING AND GRINDING MACHINES—HYDRAULIC AND ELECTRIC ARBOR PRESSES—
CYLINDER BORING BARS—MAIN BEARING LINE BORING BARS—PISTON GRINDERS—AXLES—GEARS—BRAKE DRUMS



LEMPCO PRODUCTS INC., BEDFORD, OHIO

APPEARANCE

(CONTINUED FROM PAGE 56)

has a high pressure rotary pump and a direct motor drive. Automatic control starts and stops motor at each outlet when valve is opened or closed. The Jetmixer puts kerosene into every drop of water and the Jet-Vac runs on vacuum formed by water and has no separate motor. A bypass valve automatically keeps pressure constant and takes up wear.

New Truck Transfer

Rayner-Consolidated Decalcomania Corp., Jamaica, N. Y., announces a radi-

cally different truck transfer called Durochrome. The transfers are made of the same synthetic enamel materials used in modern truck finishes. Their durability and color fastness are equal to that of the finish. When applied to a vehicle, whether the finish is synthetic enamel or lacquer, they become a part of the paint job.

Durochrome's outstanding feature is the method of application. Only water is required. The usual transfer cement is entirely eliminated so that application is greatly simplified. It is easy for even the relatively unskilled worker to apply these transfers properly. The transfer is manufactured with a protective coating which makes it unnecessary to varnish over the

transfer after it is applied. Because of the water application feature and the elimination of varnishing these truck



transfers can be applied in less than half the time customarily required. Application costs are likewise more than cut in half.

A number of leading fleet operators are already using Durochrome transfers. For full details and a few free sample "No Riders" transfers address Rayner-Consolidated Decalcomania Corp., 184-16 Jamaica Ave., Jamaica, N. Y.

Speed-Bloc Sander

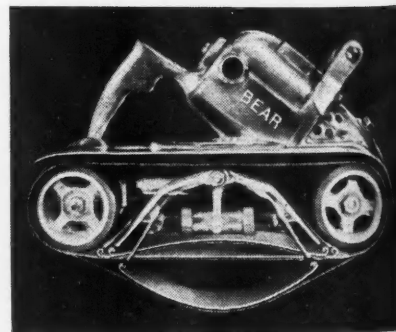
Sterling Products Co., 2457 Woodward Ave., Detroit, Mich., have a new model of their pneumatic Speed-Bloc sander. A weight saving of 25 per cent is accomplished through the use of a cast aluminum air motor block and air consumption has



been materially reduced through improvements in design. The illustration shows the unit in use complete with a filter trap, pressure regulator and automatic lubricator, all Sterling accessories.

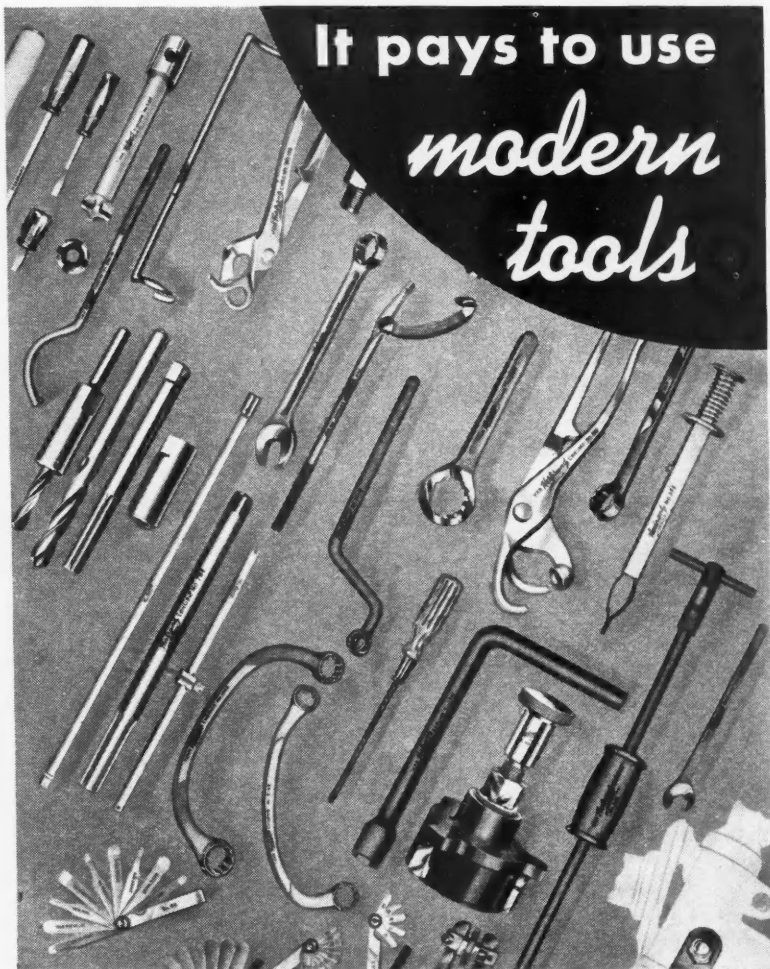
Bear Electric File

An electric file has recently been announced by the Bear Mfg. Co., Rock Island, Ill. Its unique shape permits work on flat, convex or concave surfaces. Its



compact light-weight motor is rated at $\frac{1}{2}$ hp. at 12,000 r.p.m., and the belt travels at approximately 1800 ft. per sec.

(TURN TO PAGE 92, PLEASE)



DON'T let obsolete tools cause you to lose time and rob you of your efficiency.

It will pay you to use modern tools—and you will find Herbrand jobbers are headquarters for the most complete range of up-to-date tools in the industry.

GET 180 PAGE CATALOG FREE

Ask for a free copy of the new Herbrand Catalog No. 50-M. It is packed with valuable data and information, and shows all the tools a shop should have to turn out better work in less time with less effort and at a greater profit.

THE HERBRAND CORPORATION - Fremont, Ohio

Drop-Forged Tools Since 1881



ELS ON PARADE

8 Manufacturers Exhibit CUMMINS DIESEL POWERED TRUCKS

● Thousands of visitors to the Fourth Annual National Motor Truck Show will find exceptional interest in the two exhibits of Cummins Diesel equipped trucks. Eight manufacturers are showing new chassis powered with Cummins Diesels. P. E. Letsinger, Vice President, Cummins Engine Company, claims that "within five years gasoline engines will be as obsolete in the heavy duty field as the horse and wagon is today."

TWO EXHIBITS—On the first floor, 32-foot California Style Trucks built by The White Motor Company and The Autocar Company will be shown. In addition, standard tractors built by Mack Trucks, Inc., Sterling Motors Corp., and Walter Motor Truck Co. will also be on display.

On the second floor, heavy duty dump trucks built by The Euclid Road Machinery Company, Oshkosh Motor Truck, and The Hug Company will be featured.

All of these trucks will be powered with the Cummins Dependable Diesel.

CUMMINS ENGINE COMPANY • 1001 Wilson Street, Columbus, Indiana

If you find it impossible to attend the National Motor Truck Show, be sure to write for the new book, "Twice as Far for Half as Much."



Better than 98% of all diesel powered, heavy duty long line truck operations are Cummins Diesels.
... Think This Over!

CUMMINS
Dependable
DIESEL

PIONEER IN MODERN DIESEL DEVELOPMENT

APPEARANCE

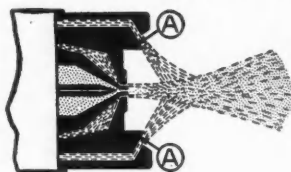
(CONTINUED FROM PAGE 88)

Hi-Lo All-Purpose Washer

Hi-Lo Mfg. Co., St. Joseph, Mo., has recently announced an improved model of its Hi-Lo all-purpose washer. The unit is an economical air and water mixing nozzle, incorporating an adjustable air valve which provides for a wide variety of water pressure. Only enough air need be added to the water supply to provide pressure desired.

Saylor-Beall Gun

A new type of commercial spray gun said to effect a considerable saving in air in the application of lacquers, enamels and

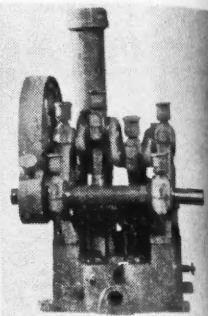


other fast drying materials has been developed by Saylor-Beall Mfg. Co., Detroit. After the paint material leaves the nozzle

orifice enveloped in a tube of air, as in the ordinary spray gun, it receives two air blasts that are softened as they slide off baffle planes (see A-A), spreading the pattern. Only these two auxiliary air streams are required to complete atomization and produce an ideal oblong pattern.

Smaller Hardie Washer

A new smaller, lower priced unit has been added to the Hardie car washer line this fall. The new Hardie is designed and priced to meet the urgent need for a light duty, low priced car washer that will deliver ample capacity and pressure for the washing of small fleets. Standard Hardie construction throughout including the exclusive Hardie feature of fully lubricated plungers. Its two-cylinders deliver 3 to 4 gal. per min. at 300 to 350 lb. pressure per sq. in.



New Permatex Wax

A smooth, glossy, water-resisting Wax Polish is being marketed by Permatex Co., Inc., Sheepshead Bay, N. Y. Cans contain 2½ oz., retail for 30 cents, and are packed in cartons of one dozen.

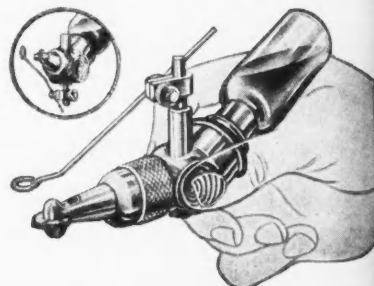
Crawford Uniforms & Covers

Crawford Mfg. Co., 2nd and Decatur Sts., Richmond, Va., offers a complete line of work clothes and uniforms for drivers, helpers and shop men. In addition the company has a full line of truck covers featuring triple stitched seams and leather reinforcements around all grommets.



Wendell Striper

Wendell Mfg., 2535 N. Ashland Ave., Chicago, has just introduced a mechanical hand set paint striper. Its features include



perfect balance and convenient shape, gravity feed, easy cleaning and interchangeable wheels for all size stripes.



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BIGGER AND BETTER HEIL MANUFACTURING AND DISTRIBUTING FACILITIES READY TO SERVE YOU!

● Two, modern, completely equipped Heil factories and a nationwide network of reliable Heil distributors are at your service to provide all of your requirements for hydraulic dump units, compartment truck tanks and snow plows . . . Resolve now to buy dependable Heil Hoists, bodies and tanks . . . Consult your nearest Heil distributor or write for free Heil literature . . . Address:

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Permater
Y. Cam
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include



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JOURNAL
EN, 1937

Have
you ever heard
the Edison story?

**IT'S
LEAK-PROOF!**

*... and so is the
Spark Plug
itself*

Here's
the new
**BUILT-IN
LEAK-PROOF
GASKET...**

... that can not move out of
correct position. This is the only
100% compression tight gasket
ever developed and it has the
added merit of easier installa-
tion because of positive con-
centric fit.

"The most important development the industry has seen in years." That is how scores of fleet operators view the new Edison Spark Plug which has been so ingeniously engineered that it "makes light of heaviest duty".

Edison Spark Plugs have been thoroughly tried and tested by many large fleets. Records obtained from maintenance men show plainly that they not only out-perform but out-live the best products in the field today. Ask your jobber to show you the new Edison Spark Plug. Have him point

out the advantages of the BUILT-IN, LEAK-PROOF GASKET and the sturdy Albanite Insulator. But don't stop there. Install a set and test them. You'll see for the first time an absolutely compression-tight seal between plug and engine block. The correct, concentric fit of this gasket eliminates compression loss completely. It definitely reduces replacements and cuts down operating costs.

If your jobber doesn't stock Edisons, write us at once.

EDISON-SPLITDORF CORPORATION, West Orange, N. J.



ECONOMY

(CONTINUED FROM PAGE 57)

mechanism the r.p.m. of the engine and it is thus possible to set governors without taking the truck out.

3. Potter Analyzer

The Potter analyzer made by the Potter Co., 1950 Sheridan Rd., Chicago, is composed of a gas analyzer, coil tester, Avo test set, selectron condenser tester, Pressure tester and a poster to give all the necessary data. Each instrument has the

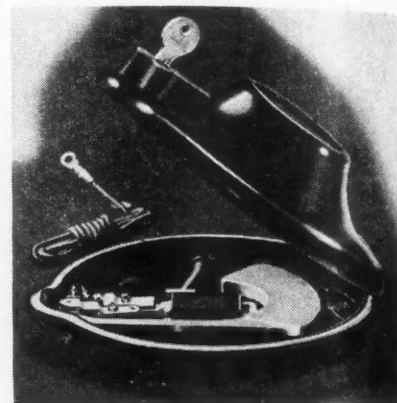
same size case and a special drawer holds the poster system. All units are available separately as well as in a complete set

4. Niehoff Generometer

The Generometer made by C. E. Niehoff and Co., 230 West Superior St., Chicago, greatly simplifies all generator, regulator and relay adjustments. The meters have bridge type construction with soft iron pole pieces for uniform scale distribution and accuracy at all points on the scale. There is an adjustable resistance with cut-in switch for cycling all types of generator regulators.

Engine Idling Recorder

The Service Recorder Co., 1422 Euclid Ave., Cleveland, Ohio, have a 6 in. standard of Servis Recorder which records motor idling in addition to the regular travel record. This recorder revolves the chart only once. There is an electric model or



one operated by engine vacuum. The price complete is \$36 including fittings and 100 charts.

Combination Tester

The Electric Heat Control Co., of 9123 Inman Avenue, Cleveland, Ohio, announces a new vacuum and fuel pump tester, the "King" Type VT. A combination gage reading 0-7 lb. pressure, 0-25 in. vacuum permits fuel pump testing as well as all vacuum test. The company also has a new compression tester, the "King" Type CT, featuring a relief valve to permit tests with least drain on battery.



Vulcan Air Cleaner Unit

A service unit for cleaning, drying and reoiling all types of air cleaners has recently been introduced by the Vulcan Electric Co., Inc., St. Paul, Minn. One air line connection provides means to force cleaning solvent from reservoir through the filter. A second air connection provides a blast of straight air for drying, and attached to this is a clean oil container which admits oil to the spray when desired.





DON'T
Gamble

Adopted by
Leading
Fleet Owners
and Manufacturers

More Than
Meets I. C. C.
Specifications

SPECIFY
KING BEE
Truck Equipment

- ★ HY-POWER LONG LIFE LAMPS
 - ★ PROTECTO RUBBER RIMMED MIRRORS
 - ★ FOTO-RAY BREAK PROOF REFLECTORS
 - ★ ACE LEAK PROOF OIL FLARES
- Dependable • Lasts Longer • Spells Economy**

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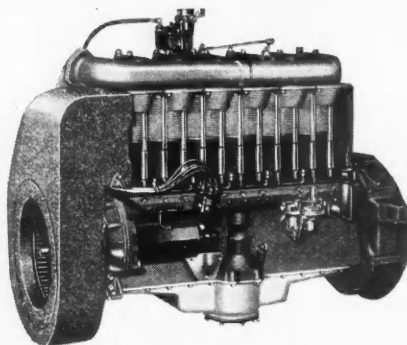
ENGINES, ETC.

(CONTINUED FROM PAGE 49)

New Franklin Company

Air Cooled Motors Corp., which recently took over the plant, assets, patents and good will of Doman-Marks Engine Co., Inc., Syracuse, N. Y., announces the acquisition of the name, trade-mark and patents of the defunct Franklin Automobile Co.

Air Cooled Motors Corp. will continue to manufacture heavy duty air-cooled units for use in trucks, air compressors, saw mills and other industrial equipment. These will be offered under the Franklin name



and will be available for replacement purposes.



Better performance on hills! More profitable speed on level roads! Smooth starting with heavy loads—no bucking, frogging, or damaging shock to driving parts! Engine life prolonged by fewer revolutions! Cost of gas, oil, and repairs reduced! These are only a few of the many benefits that you can obtain from a 2-speed axle which provides gear ratios suited to every road and load condition. Economically adaptable to practically every type of trucking service. Built for all makes and types of trucks from 1½ ton capacity, up! Get the facts!

EATON MANUFACTURING CO. • CLEVELAND, OHIO

EATON

Ruckstell

2 SPEED AXLE

with New Eaton Forced Flow Axle Lubrication

8 Speeds Forward
—and 2 Reverse

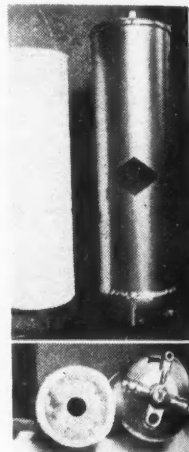
Buda Engines

The Buda Co., Harvey, Ill., have a line of four diesel engines ranging in size from 196 cu. in. of piston displacement to 691 cu. in. of piston displacement. All of these engines incorporate the Buda-Lanova combustion system in which the fuel leaving the nozzle passes along the common center of two lobes formed in the cylinder head under the exhaust and intake valves and directly over the cylinder proper. The fuel passes through the hot compressed air generated in the compression stroke into minor and major air chambers. The combustion is produced in these energy chambers impinging upon the residual spray as it leaves the nozzle and is in suspension. The counterflow thus set up thoroughly mixes all atomized fuel, gives accelerated burning and progressive rise in pressure.

Briggs Oil Clarifier

A new type of refill for Model 1000 Briggs Clarifier has been developed which has greater capacity and efficiency than the previous refill. A finer grade of fuller's earth has been used. This new block is more adsorptive and will remove more acid, gum, and carbon from the lubricating oil. Metal caps are Autoclensed to the block, and the wire handle for removing the block is also Autoclensed to the block.

Oil Clarifiers are available in all sizes for Automotive and Diesel use. Briggs Clarifier Co., 3262 K Street, N.W., Washington, D. C.



Michiana Oil Filter

The Michiana Products Corp., Michigan City, Ind., have recently developed a combination oil filter which has a small micro-mesh element in series between the oil pump and the bearings and then an absorption filter that takes some of the oil that has passed through the screen, filters it and returns it to the crankcase. The positive type filter may be either the H-W Duo-Flo or the Michiana Duo-Flo type.

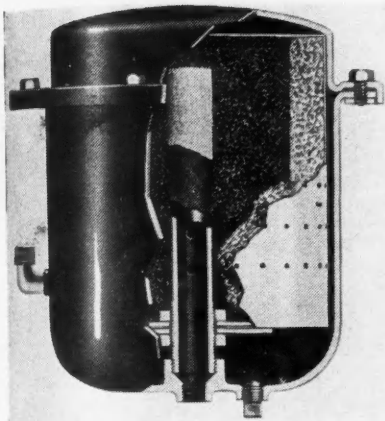
Dushane Oil Clarifier

Ability to remove water and acid as well as sludge and even microscopic solids from engine oil and thus keep the oil as clean as when first poured into the crankcase is the claim of The Dushane Company, Inc., Detroit, Mich., for the Perfect

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NOVEMBER, 1937

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Clarifier. The device is of the removable cartridge type, with a substantial steel shell, the cover of which is held in place against a cork gasket by cap screws. In addition to cotton, which in the Clarifier cartridge is under high pressure, the cartridge is charged with a tightly packed mixture of carefully prepared mineral filtering



materials. The action of these materials is said to remove both water and acid from the crankcase.

Hoof Calibrated Governors

The Hoof Products Co., 162 N. Franklin St., Chicago, Ill., in announcing their 1938, 10 to 50 series governors has added to the regular Hoof features a unique system of special calibration for their governors which assures accurate setting of each individual unit. All calibrated governors are mounted on a gasoline engine attached to the dynamometer which gauges in their laboratory the exact performance of the governor. A definite torque curve is established for each governor, clearly showing its performance in the idle, part load and full load operation. This accurate calibration saves the fleet superintendent the time and expense of regulating, setting, and checking the governors after they have been installed. Hoof Governors have been designed around several patented features, principal of which is the cantilever spring. This spring is of leaf construction made of Swedish type clock spring steel.

Handy Oil Conditioner

Combining the duties of filter and clarifier, the Handy Oil Conditioner, made by the Handy Governor Corp., Detroit, Mich., keeps crank case oil clean, clear, colorful and free from acids, water or other contamination for the entire life of its Filtorex Purifying Element. Element Replacement Cartridge is easily replaced and is available nationally at an unusually low price.

Air-Maze Air Cleaners

The Air-Maze Corp., Cleveland, Ohio, makes two types of air cleaners, the oil bath type and the Unimaze type. Either type will trap 99 per cent of the dust and grit that would otherwise enter the carburetor. Both involve very low restriction. They are made in various sizes so that a correct size cleaner can be applied to any size engine.

AC Heavy Duty Air Cleaner

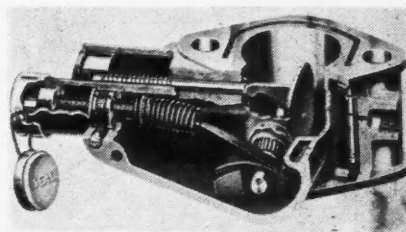
For trucks, especially on construction work in alkali or extremely dusty territory, this AC heavy duty air cleaner will save repair expense and prolong engine life. It is simple in construction, easy to install on down draft carburetors and easy to service. It is quickly interchangeable with the silencer and air cleaner installed on the carburetor as standard equipment and will not affect the power and economy.

Handy Vari-Speed Governor

Perfected in detail, as the result of its first year of use, the Handy Vari-Speed (Velocity-Type) Governor for 1938 offers

the truck owner factors of simplicity and flexibility never hitherto available.

Each Handy Vari-Speed is easily adjust-



able to govern, without power loss, at any point from 1200 to 3400 r.p.m. Accurate
(TURN TO PAGE 106, PLEASE)

White-Merchandor

WARD'S CAKES
WARD BAKING CO.

A special adaptation of our design for White 1½ ton chassis

LUCE
MASTERCRAFT
TRUCK BODIES
FOR SAFE AND FAST FOOD TRANSPORTATION

LUCE
MERCHANDOR
ONE STEP DOOR-TO-DOOR
DELIVERY BODIES

Two of the world's most important names in modern truck body design and construction

LUCE MANUFACTURING CO.
LANSING, MICHIGAN

(CONTINUED FROM PAGE 105)
calibration is accomplished without tools and by means of a single cap which is then sealed or locked to prevent tampering. The new model retains the equalizing cam, non-stealing stabilizer and other features developed and patented by the Handy Governor Corp., 3925 W. Fort St., Detroit, Mich.

Pierce Zone Governor

Pierce Zone Control is the name adopted for a new type governor which features three controlled speed ranges and a free range. Each range can be readily selected from the cab by a special four position

switch. A series of three lights at the



rear of the truck indicate the speed to which the truck is governed at any par-

ticular place or time. Chief value of the outfit, it is claimed, is the public good will gained by advertising the fact that the vehicle is operating within a fixed speed range conforming to the particular location. Pierce Governor Co., 116 Ohio Ave., Anderson, Ind., is the maker.

Electric Fuel Pump

Electric Fuel Pumps are suggested by the Autopulse Corp., Detroit, Mich., as a means of eliminating vapor lock. Since the pumps are electrically operated they can be mounted away from the heat of the engine so the vapor loss from overheated fuel is largely eliminated. In severe installations

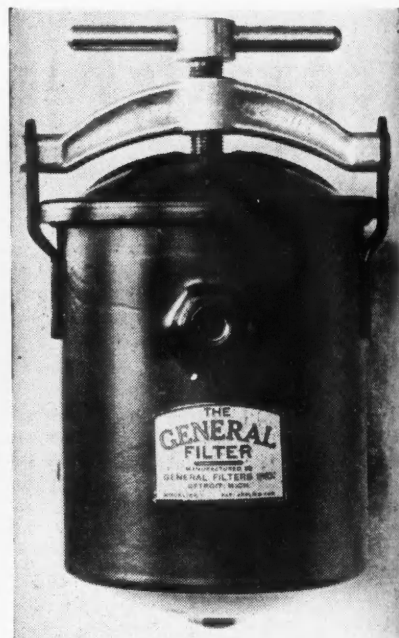


the Autopulse is mounted at the supply tank where it pushes fuel to the carburetor instead of drawing it.

Pumps are available for any fuel consumption and when multiple hook-ups are used the failure of one unit does not affect others. Electric pumps can be used in conjunction with mechanical pumps as insurance against road failures.

General Oil Filter

Cartridges used in the oil filter made by the General Filters, Inc., 9001 Alpine Ave., Detroit, Mich., can be changed in one minute. The shell is made of 16 gage steel with inserted brass fittings. A can-



type cartridge is used and it is recommended that this be changed every 3000 to 6000 miles or when the oil shows sufficient discoloration on the bayonet.

FOR
The Answer

TO THE RETAIL DELIVERY BODY PROBLEMS . . .

Entirely new time saving features characterize York-Hoover's ALL STEEL step in body for 1938.

In addition to refinements to the proven ALL STEEL construction a new driver's seat offers greater comfort still retaining the exclusive tilting pedestal.

A newly designed step well permits freer motion in making deliveries.

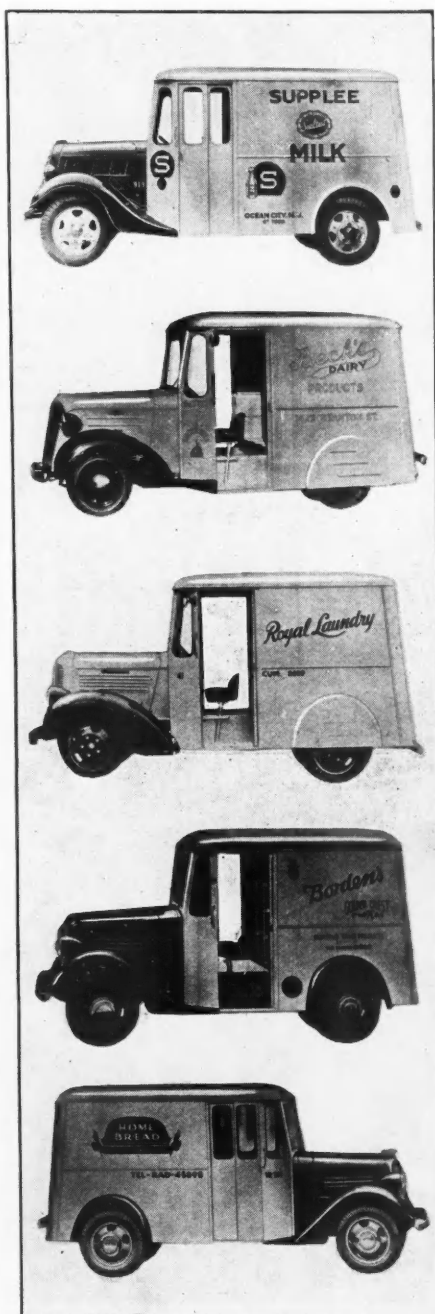
An entirely new method of roof insulation is provided.

Flexible wheel pockets, universal battery box and gasoline tank, — handy tool box are included.

These are only a few of the features that will reduce maintenance costs, speed up delivery, thereby earning additional dollars for the operator.

Write for complete information.

YORK-HOOVER BODY CORP.
YORK, PENNSYLVANIA, U. S. A.



Cut Chain Costs by more than *Doubling* **SAFE Mileage**

● The same feature that makes WEED Americans wear more than twice as long also makes them the *safer* chains. That is the double-welded Bar-Reinforcement. It provides twice the metal to wear through—and grips the road three ways, stopping forward, back and side skids.

WEED Americans are made of "Weedalloy"—a tough, wear-resisting metal especially developed for WEED tire chains. Side chain links are welded and hardened to take the punishment of curbs and ruts. Patented Lever-Lock End Hooks make WEED Americans easy to put on and remove.

Standardize on WEED American Bar-Reinforced Tire Chains and save on tire chain costs.

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT, CONNECTICUT

Bar-Reinforced
WEED Americans
give you more than
TWICE the
mileage

and we'll
show you how
to add **25%**
to that

SEND FOR FREE CHART

25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

*In Business
for Your
Safety*



WEED

WEED American Bar-Reinforced TIRE CHAINS

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: American Chain & Cable Company, Inc.; The McKay Company; The Hodell Chain Company; Pyrene Manufacturing Company; Dominion Chain Company, Limited; and Pyrene Manufacturing Company of Canada, Limited.

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NOVEMBER, 1937

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PARTS

(CONTINUED FROM PAGE 53)

6. Thermoid Heavy-Duty Linings

Supplementing its well known Thermo-block for heavy duty brake installations, the Thermoid Co., Trenton, N. J. now offers a line of custom brake block sets particularly adapted for servicing commercial vehicles in 1½ to 4 ton ranges. Materials used in these sets include seven different frictions to assure best results in specific applications. With custom-built sets, custom brake block sets and Thermo-block, the company offers a complete range for all commercial vehicles.

7. AC Blue Top Spark Plug

The new AC Blue Top Line for passenger cars, buses, tractors and trucks is a consolidation of, and improvement on, the former AC regular, long life, universal and tractor lines and supplants them all for equipment and replacement. Each type and size is specifically designed to give peak performance, even under the most severe conditions, in the service it is engineered to fit. Outstanding features of each of the former lines, plus many new and thoroughly tested improvements, are present in each of the Blue top types in accordance with the requirements of the service for which they are designed.

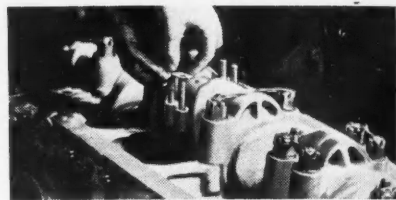
Elsbert High-Output Coil

Elsbert Manufacturing Company, 353 W. Grand Ave., Chicago, now has on the market an ignition coil which in addition to the regular ignition current develops an ultra-high frequency oscillating current. By the use of this high frequency current, they are able to produce a total ignition current of from three to six times that of standard ignition. Because of the hotter spark produced, considerably better performance and operating economy are claimed. B. J. Grigsby, former head of Grigsby-Grunow Co., has recently organized the company.



Laminum Shims

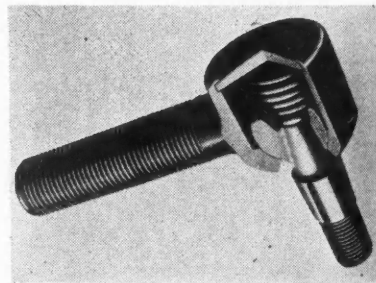
Laminated Shim Co., Long Island City, N. Y. points out the advantages of quick precision adjustments obtainable through the use of Laminum shims. Shims may be peeled off in .002 in. or .003 in. thick-



nesses, and may be accomplished right on the job without recourse to machine tool equipment. For pressure lubrication, Laminum shims are provided with soft bab-bitted tip, which effectively seal the oil in the bearing and prevent pressure loss.

Permite Tie Rod End

Aluminum Industries, Inc., Cincinnati, Ohio, has announced a new Permite all-steel ball cup tie rod end. Generous wear



surface is provided between the ball stud and cup and equal areas of moving and stationary parts tends to maintain the spherical surface of the ball stud. A loading spring maintains contact at all times.

New Ramco Skirt Expander

Details of a new Ramco piston skirt expander have just been released by the (TURN TO PAGE 110, PLEASE)

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NOVEMBER, 1937



Are Self Ballasting!



As snow is removed from the highway by the Frink Sno-Plow, two distinct movements of the snow are blended into one continuous operation—*raising* the snow above the adjoining banks by the riser board or front portion of the moldboard and *spreading* the snow to the sides by the upper paneled portion of the moldboard.

Raising the snow produces a downward pressure on the Sno-Plow, a certain portion of which is transferred through the heel adjusting chains to the front end of the truck chassis, thus holding the front wheels in better contact with the road surface and eliminating any tendency of the front wheels to skid sideways.

Frink Sno-Plows, therefore, are automatically ballasted in direct proportion to the depth of the snow being removed.

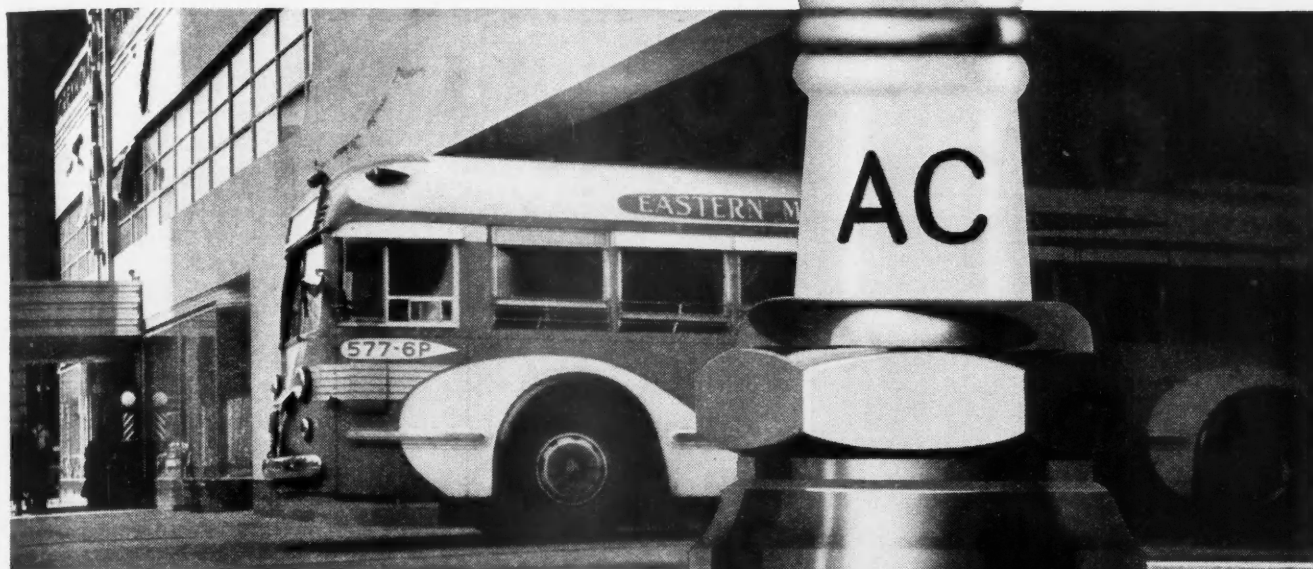
*This is only one distinctive feature of the Frink.
Write for Catalog 37BC and investigate them all.*

CARL H. FRINK, Mfr.,
CLAYTON 1000 NEW YORK
Islands

DAVENPORT BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN., Ltd., TORONTO, ONT.

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SURE FIRE  **FOR THE TOUGHEST SERVICE**



AC BLUE TOP SPARK PLUGS

Extreme reliability is a standard characteristic of the new AC Blue Top Spark Plugs for bus and truck service. Each bus and truck type—designed especially for heavy service—possesses a wide heat range. Each type is of AC's time-tried, one-piece, heat-sealed construction—free from "blow by" and compression leakage. Each type includes the patented AC features of welded side electrode, Isovolt electrode material, and long-lived, high efficiency center

electrode construction. In addition, each type possesses other features specifically developed for the service that type is to fit.

Sure performance—freedom from schedule interruptions—low operating cost—and long life are a certainty when you run on AC Blue Top Spark Plugs.



KEEP PLUGS IN PEAK CONDITION
with the

AC SPARK PLUG CLEANER

Designed and built by AC, this machine cleans plugs thoroughly in 5 to 10 seconds. A quality-built shop tool, it pays for itself in a short time.

REFER TO THE 1937 AC HEAT RANGE CHART
To Remedy Sooting or Pre-Ignition

It quickly shows the hotter plug type which will eliminate chronic fouling; and the cooler type that will correct pre-ignition, blow-by, rapid electrode wear.

AC Heat Range Chart

Vertical Scale (Left): 50°F, 60°F, 70°F, 80°F, 90°F

Horizontal Scale (Top): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Chart Content: The chart displays various AC models and their corresponding temperature ranges and heat ranges. The models listed include: 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 3200, 3400, 3600, 3800, 4000, 4200, 4400, 4600, 4800, 5000, 5200, 5400, 5600, 5800, 6000, 6200, 6400, 6600, 6800, 7000, 7200, 7400, 7600, 7800, 8000, 8200, 8400, 8600, 8800, 9000, 9200, 9400, 9600, 9800, 10000, 10200, 10400, 10600, 10800, 11000, 11200, 11400, 11600, 11800, 12000, 12200, 12400, 12600, 12800, 13000, 13200, 13400, 13600, 13800, 14000, 14200, 14400, 14600, 14800, 15000, 15200, 15400, 15600, 15800, 16000, 16200, 16400, 16600, 16800, 17000, 17200, 17400, 17600, 17800, 18000, 18200, 18400, 18600, 18800, 19000, 19200, 19400, 19600, 19800, 20000, 20200, 20400, 20600, 20800, 21000, 21200, 21400, 21600, 21800, 22000, 22200, 22400, 22600, 22800, 23000, 23200, 23400, 23600, 23800, 24000, 24200, 24400, 24600, 24800, 25000, 25200, 25400, 25600, 25800, 26000, 26200, 26400, 26600, 26800, 27000, 27200, 27400, 27600, 27800, 28000, 28200, 28400, 28600, 28800, 29000, 29200, 29400, 29600, 29800, 30000, 30200, 30400, 30600, 30800, 31000, 31200, 31400, 31600, 31800, 32000, 32200, 32400, 32600, 32800, 33000, 33200, 33400, 33600, 33800, 34000, 34200, 34400, 34600, 34800, 35000, 35200, 35400, 35600, 35800, 36000, 36200, 36400, 36600, 36800, 37000, 37200, 37400, 37600, 37800, 38000, 38200, 38400, 38600, 38800, 39000, 39200, 39400, 39600, 39800, 40000, 40200, 40400, 40600, 40800, 41000, 41200, 41400, 41600, 41800, 42000, 42200, 42400, 42600, 42800, 43000, 43200, 43400, 43600, 43800, 44000, 44200, 44400, 44600, 44800, 45000, 45200, 45400, 45600, 45800, 46000, 46200, 46400, 46600, 46800, 47000, 47200, 47400, 47600, 47800, 48000, 48200, 48400, 48600, 48800, 49000, 49200, 49400, 49600, 49800, 50000, 50200, 50400, 50600, 50800, 51000, 51200, 51400, 51600, 51800, 52000, 52200, 52400, 52600, 52800, 53000, 53200, 53400, 53600, 53800, 54000, 54200, 54400, 54600, 54800, 55000, 55200, 55400, 55600, 55800, 56000, 56200, 56400, 56600, 56800, 57000, 57200, 57400, 57600, 57800, 58000, 58200, 58400, 58600, 58800, 59000, 59200, 59400, 59600, 59800, 60000, 60200, 60400, 60600, 60800, 61000, 61200, 61400, 61600, 61800, 62000, 62200, 62400, 62600, 62800, 63000, 63200, 63400, 63600, 63800, 64000, 64200, 64400, 64600, 64800, 65000, 65200, 65400, 65600, 65800, 66000, 66200, 66400, 66600, 66800, 67000, 67200, 67400, 67600, 67800, 68000, 68200, 68400, 68600, 68800, 69000, 69200, 69400, 69600, 69800, 70000, 70200, 70400, 70600, 70800, 71000, 71200, 71400, 71600, 71800, 72000, 72200, 72400, 72600, 72800, 73000, 73200, 73400, 73600, 73800, 74000, 74200, 74400, 74600, 74800, 75000, 75200, 75400, 75600, 75800, 76000, 76200, 76400, 76600, 76800, 77000, 77200, 77400, 77600, 77800, 78000, 78200, 78400, 78600, 78800, 79000, 79200, 79400, 79600, 79800, 80000, 80200, 80400, 80600, 80800, 81000, 81200, 81400, 81600, 81800, 82000, 82200, 82400, 82600, 82800, 83000, 83200, 83400, 83600, 83800, 84000, 84200, 84400, 84600, 84800, 85000, 85200, 85400, 85600, 85800, 86000, 86200, 86400, 86600, 86800, 87000, 87200, 87400, 87600, 87800, 88000, 88200, 88400, 88600, 88800, 89000, 89200, 89400, 89600, 89800, 90000, 90200, 90400, 90600, 90800, 91000, 91200, 91400, 91600, 91800, 92000, 92200, 92400, 92600, 92800, 93000, 93200, 93400, 93600, 93800, 94000, 94200, 94400, 94600, 94800, 95000, 95200, 95400, 95600, 95800, 96000, 96200, 96400, 96600, 96800, 97000, 97200, 97400, 97600, 97800, 98000, 98200, 98400, 98600, 98800, 99000, 99200, 99400, 99600, 99800, 100000, 100200, 100400, 100600, 100800, 101000, 101200, 101400, 101600, 101800, 102000, 102200, 102400, 102600, 102800, 103000, 103200, 103400, 103600, 103800, 104000, 104200, 104400, 104600, 104800, 105000, 105200, 105400, 105600, 105800, 106000, 106200, 106400, 106600, 106800, 107000, 107200, 107400, 107600, 107800, 108000, 108200, 108400, 108600, 108800, 109000, 109200, 109400, 109600, 109800, 110000, 110200, 110400, 110600, 110800, 111000, 111200, 111400, 111600, 111800, 112

AC SPARK PLUG DIVISION • General Motors Corporation • FLINT, MICHIGAN

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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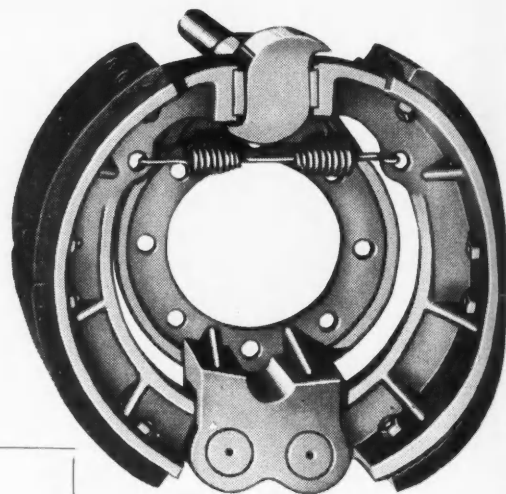
(CONTINUED FROM PAGE 108)

Ramsey Accessories Mfg. Corp., 3693 Forrest Park Blvd., St. Louis. The expander proper is held absolutely at right angles to the wrist pin and parallel with top and bottom of the piston. The thrust is therefore exactly against the collapsed portion of the piston. The expander is delivered with ends clipped together. Installation is made by dropping the expander into the piston with pin removed. The pin is then inserted through predetermined openings in the lobes of the expander and the clip removed.

A new Ramco ring is forthcoming, but details are not yet announced.

Shuler Jumbo Brake

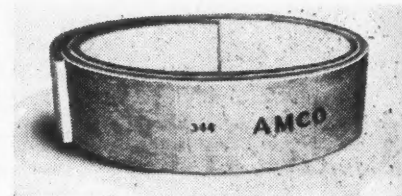
Shuler Axle Co., Louisville, Ky., has recently added to its regular line of brakes a new "jumbo series," available in sizes 16 x 3½ and 16 x 4 with ½ in. thick molded lining, and 16 x 4, 16 x 5, 16 x 6 and 17¼ x 5½ with ¾ in. thick molded lining. Heavy cast T section shoes with ribbed reinforcements are used as are uniformly accelerated "S" cams or constant rise. Eccentric anchor pins provide sufficient adjustment for the



life of the lining. On the ¾ in. lined brakes, cast alloy drums, with helical-cooling ribs are provided. All models are adaptable to mechanical, vacuum or air operation.

Amsco Lining No. 344

The Asbestos Mfg. Co. of Huntington, Ind., announces a new heavy-duty woven brake lining, No. 344, which is especially designed for installations where high friction is demanded. This material has been



most successful in jack shaft and propeller shaft brakes where extremely high loadings and high temperatures are encountered. This No. 344 woven has a very high rivet strength, to resist forces tending to shift the brake lining on the shoe or band.

Screw Shackles for V-8's

Screw-type spring-shackle bolts and bushings for Ford V-8's are now being offered to fleet operators by the Service Spring Co., 735 St. Paul St., Indianapolis, Ind. Each shackle bolt-and-bushing assembly consists of a hardened steel bolt, threaded, with a correspondingly threaded steel bushing, in a lubricated, close-fitting contact. Lubricant is applied through a standard Alemite fitting, and passes through the hollow center of the bolt.

The makers claim extremely long life, due to the threaded design and the hardened materials used, plus the provision for lubrication.

Neapco Universal Joints

New England Auto Products Corp., Pottstown, Pa. has recently announced a line of power-take-off universal joints. The 8800 series is of the welded type, the arms being permanently welded to the hub. The

(TURN TO PAGE 112, PLEASE)



A Truck transmission is operated largely in the three top speeds, and consequently it is the gears in these speeds that take the punishment. FULLER uses big, wide, helical gears in these three top speeds. And what gears! Case hardened . . . heat treated . . . made with special attention to the contour of the teeth and the finish on the face of the teeth.

These helical gears, in continuous pitch line contact, are extremely quiet, and low tooth pressure which results from the extra width of the teeth, assures a very minimum of wear.

Specify FULLER Transmission for your trucks. Their durability and flexibility will help you haul more pay load per dollar.

FULLER MFG. CO.
KALAMAZOO . . MICH.

MODELS 5A43 and 5A430—Heavy duty unit. Five speeds forward, two reverse. Overdrive or direct on fifth.



FULLER TRANSMISSIONS FOR TRUCKS and BUSES

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PROFESSIONAL MOTOR CARRIERS DESIGNED *these* MODERN FRUEHAUF TRAILERS!

WHY do the professional motor carriers of the country buy more Fruehauf Trailers than any other make? They put their hard earned money into Fruehaufs because, first of all, they have put *their ideas* into Fruehauf design and construction.

ON-THE-JOB ENGINEERING

Through the years we have been in close contact with more professional haulers than any other Trailer organization. Fruehauf engineers—*transportation* engineers—have met the haulage problems of countless customers. They've studied operating conditions. They've worked strictly from the user's viewpoint—developing for and with him new design, new construction, *new economies for his benefit.*

THE "OPEN MIND" PAYS

We believe in the "open mind." We don't "know it all"—we are always ready to listen to the customer's viewpoint, his ideas, his desires.

In return, we find that the average buyer meets us with an open mind. He looks about him—sees the tremendous number of Fruehaufs on the highways everywhere. He decides this overwhelming choice of Fruehauf equipment is substantial evidence of merit and of our desire to do everything pos-

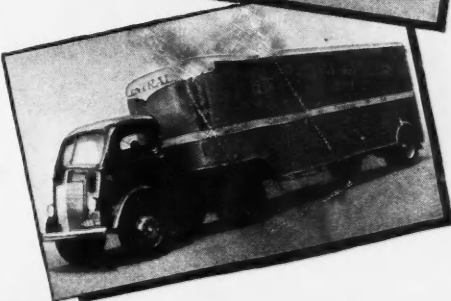
sible to please our customers. And when buyer and builder meet—each with an open mind—*what happens?* Why, a purchase is made—an investment that's mutually satisfactory.

MAY WE WORK WITH YOU?

Tell us your haulage problem. Show us what you want to do, what you hope to accomplish. There'll be no obligation on your part—but new efficiency, new economies, new *transportation-satisfaction* will be our aim in all of our dealings with you.

*Oldest and Largest Manufacturers
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FRUEHAUF TRAILER COMPANY
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Sales and Service In All Principal Cities



FRUEHAUF TRAILERS

"Engineered Transportation"

REG. U. S. PAT. OFF.

**AT EVERY ANGLE THE
"COST CURVE" IS GOING
UP . . . EXCEPT ONE!**

MOTOR CARRIERS, are costs a "nightmare" for you? With wages, materials and **TAXES** up—with special fees for lawyers, accountants and other experts consistently growing—how about some **FREE COUNSEL** from the nearest Fruehauf man? Fruehauf cost-cutting ideas and suggestions are always available. There may be some helpful "short cuts" that can be worked out in your operations. We'd like to investigate and place our recommendations before you. Call, write or wire our nearest Branch or Distributor.

PROFESSIONAL HAULERS USE MORE FRUEHAUF TRAILERS THAN ANY OTHER MAKE

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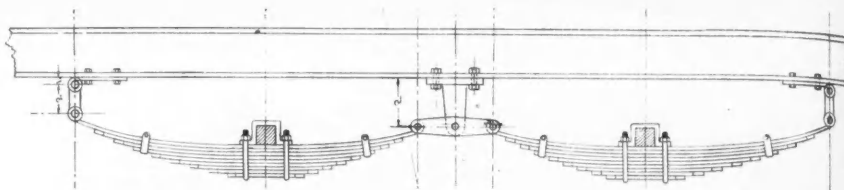
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(CONTINUED FROM PAGE 110)

8700 series, heavy duty, features an internal lock ring, which makes assembly a matter of seconds.

Universal Mufflers

Universal Mufflers, product of Universal Parts, Inc., 1423 S. Michigan Ave., Chicago, are fitted with a set of adjustable bushings which permit a wide variety of applications for each muffler model. Adjustment is possible because of parallel overlapping slots. Between the slots are solid steel walls which cling to the exhaust or tail pipe as bushings are compressed by clamp, forming a gas tight connection.



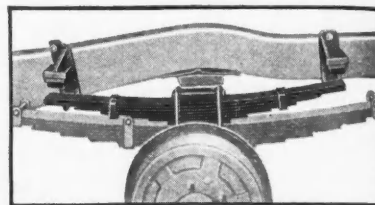
Tuthill Tandem Trailer Spring

A new spring assembly for trailers using tandem axles has been introduced by Tuthill Spring Co., 760 Polk St., Chicago. Chief feature is the walking beam equalizer which connects the two springs and equalizes load distribution. Distances

from spring centers to equalizer are shorter than to the outer ends. In the model illustrated, outer ends are 20 in., inner ends 16, while the equalizer itself is 8 in., from bushing center to center.

St. Louis Overload Springs

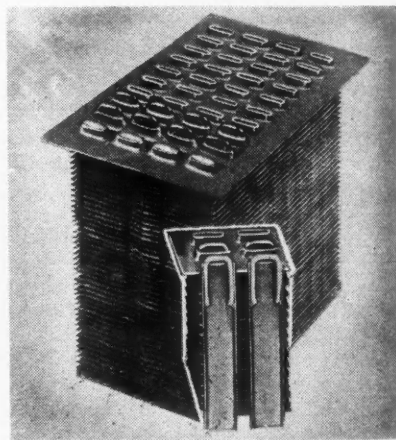
St. Louis Spring Co., 6650 Easton Ave., St. Louis, Mo., manufacturers of Moog-St. Louis replacement springs, announce C-90 and C-91 overload helper springs



especially engineered for the Chevrolet $\frac{3}{4}$ and 1-ton trucks. These springs, made of electrically heat treated alloy steels, provide overload protection from 1500 to 2000 lb. extra capacity. They are provided with special fittings that require no drilling.

Young Radiator

Young Radiator Co., Racine, Wis., has developed a patented tube reinforcement construction which greatly strengthens the



tube end structure. It is an important feature for all heavy duty service where operating conditions are tough. Construction is clearly shown in the illustration.

General Switches

General Automotive Specialty Co., Inc., 17 W. 60th St., New York, is offering single and double throw ignition switches known as ULS 600 and ULS 700 respectively. These switches are fitted with Yale tumbler and two keys. The company also manufactures a heavy-duty push pull switch for all accessory uses.

(TURN TO PAGE 114, PLEASE)



A few of the seventy-two units of the Golden State Company, Ltd. fleet before the company's plant, Glendale, Calif.

CUTTING operating costs thirty-five per cent on seventy-two trucks by standardizing on Gatke Moulded Brake Lining, is a significant story to any fleet operator.

G. J. Coners, Superintendent of the Golden State Company Ltd., Glendale, Calif., producers of processed dairy products, advises that important economy is due to the elimination of frequent truck tie-ups for brake adjustments and replacements, necessary with other brake linings they have tried. Moreover, squeaks no longer embarrass drivers making 250 to 300 night stops per shift.

Gatke files are filled with astonishing and convincing service stories from fleet owners in such severe operations as sand and gravel, overland hauling, lumber, oil delivery, etc., with trucks of practically every type and capacity represented.

What Gatke Moulded or Woven Brake Linings, for customary or heavy duty service, can do for these fleets they can do for you. Gatke Brake Lining available in Sets, Blocks, Rolls—Woven and Moulded and Radius Slab Units.

Ask your *Gatke* jobber or write us for material recommendations and complete information



GATKE CORPORATION
228 N. La Salle Street Chicago, Illinois

GRAMM

The Completely . . . **SAFE TRAILER**

**A Startling
New Design
From Stem to
Stern . . .
Brilliant in the
Application of
Safety and
Economy
Features . . .**



**"Choose a Gramm if you want an
easy pulling Trailer."**

GRAMM TRAILER DIVISION

DELPHOS, OHIO, U. S. A.

Division Gramm Motor Truck Corp.

- 1** Vacuum Brake Diaphragms, each one large size, powerful, and directly connected to brake lever. Mounted on brackets solidly welded to axle.
 - 2** Slack Adjuster type brake levers provide a quick method of brake take-up.
 - 3** Mechanical Brakes are large size Timken with thick lining. Not self-energizing. Easy and simple to adjust with thousands of miles between adjustments.
 - 4** Dual Vacuum Tanks with sufficient capacity for several brake applications in case engine stalls, or to automatically set brakes if trailer breaks away.
 - 5** Quick Release Valve provides snappy brake action.
 - 6** Husky I-Beam Radius Rod with Compression Rubber Bushings in each end.
 - 7** Non-bending Spring Clip Plate. Clip nuts are under axle where they may be tightened quickly, conveniently and with trailer loaded.
 - 8** Special Alloy Springs, each end supporting load through hardened, non-wearing, cast alloy inserts moulded into spring hangers. Replacement of expensive shackles, bushings and pins is eliminated.
 - 9** Rubber Cushioned Rebound Tubes—a special Gramm development which eliminates spring end movement due to brake reaction.
 - 10** Safety Third Leaf. If Radius Rod becomes damaged through accident, the ends of this leaf coming against Rubber Rebound Tubes, will act as a substitute Radius Rod.
 - 11** Permanent Truss prevents frame sag which is damaging to body construction. The Frame has full depth cross members and is electric welded and riveted.
 - 12** Timken Tubular Axle available in five sizes for various load conditions.
- Truck and Trailer Dealers and Operators should write immediately for further data.**

(CONTINUED FROM PAGE 112)

Rusco Brake Lining

The Russell Mfg. Co., Middletown, Conn., is offering three brake lining materials designed to meet all truck needs. Rusco 77 and 77A provides balanced installations for passenger car and light commercial units. Rusco W. B. slab stock, a full molded wire-back lining, is furnished for bus and truck installations in $\frac{1}{4}$, $\frac{5}{16}$ and $\frac{3}{8}$ thicknesses in all drum ranges. The Rusco Ace Industrial is a heavy duty woven molded lining furnished in sizes up to $\frac{1}{2}$ in. thick and in widths as large as 12 in. for conversion to popular sizes.

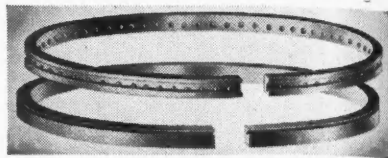
Heavy-Duty Lining

L. J. Miley Co., 1462 S. Michigan Ave., Chicago, announces a new brake lining structure known as Miley DeLuxe Molded Lining. It is said to be especially adaptable to all power brake installations as well as to Bendix and hydraulic types. Supplied in rolls fully cured and ready for immediate installation.

International Rings

A super-scraper compression ring has recently been announced by the International Piston Ring Co., 2401 W. Superior Ave., Cleveland. The ring features a $\frac{1}{2}$ deg. taper on the outer periphery, said to

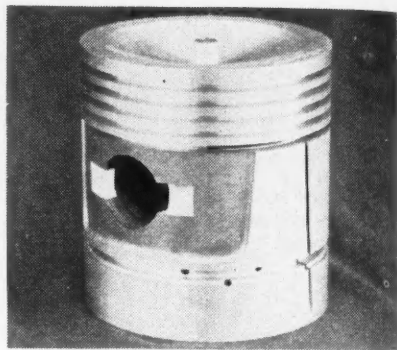
effect immediate cylinder seal, without shortening the life of the ring. Greater oil life is also claimed as the minute taper



rides over the oil film, rather than push it to the top. The company's oil ring, also illustrated, provides strong tension due to the small amount of metal drilled.

Emsco Pistons

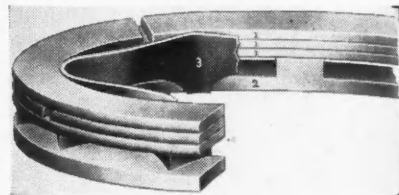
Emsco Piston Co., Bell, Calif., offer an extensive line of pistons for the replacement market. All are aluminum alloy products carefully developed under Emsco supervision. In addition to popular lines



special pistons have been developed in the truck field for representative models of G.M.C., Hall-Scott, Hercules, White, Mack and Reo.

Wel-Ever Dran-Bac Sets

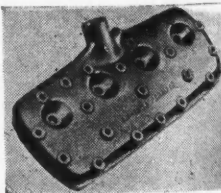
Four new Dran-Bac Ring Sets have recently been added to the line marketed by the Wel-Ever Piston Ring Co., Toledo, Ohio. Designated as DC, DM, DS and H,



these sets embody the dran-bac sectional oil ring, the Wel-Ever multi-compression ring, speed compression ring or plain compression ring in various combinations.

Permite V-8 Head

To complete its line of aluminum heads for all Ford models from 1932 to the present, the Aluminum Industries, Inc., 2416 Beekman St., Cincinnati, Ohio, has recently announced new Permite Aluminum Alloy Heads for both the 60 hp. and 85 hp. model 1937 Ford V-8 engines.



3 Reasons why more fleets choose Midland Power Brakes

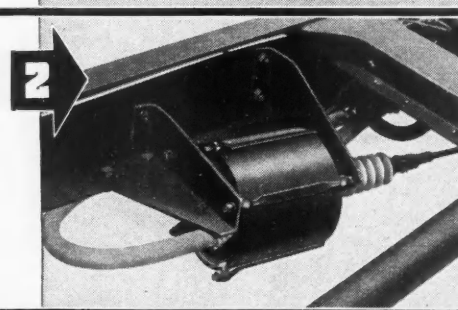
1 162 SALES AND SERVICE DEPOTS

• The nation-wide network of Midland distributors and service stations makes prompt service available for your fleet from coast-to-coast. The Midland sign on any brake service establishment is the mark of modern and efficient service.



2 STANDARD EQUIPMENT OF 32 MANUFACTURERS

32 manufacturers of trucks, tractors and trailers have chosen Midland Power Brakes as standard equipment. This wide-spread acceptance has been earned by trouble-free, low-cost performance. Specify Midland on your fleet.



3 FACTORY REBUILT EXCHANGE PLAN

Midland insures economical power braking by their policy of exchanging your Midland equipment for factory rebuilt units carrying new-unit guarantee. This exchange plan means both low-cost maintenance and top-notch performance at all times.



THE MIDLAND STEEL PRODUCTS CO.

10605 Madison Avenue • Cleveland, Ohio



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NOVEMBER, 1937

This Mechanic Started Something!



L. A. Warmington, Mechanic
The Film Transit Co., Cleveland, Ohio

THE FILM TRANSIT CO.

220 FILM BUILDING, E. 21st and PAYNE AVENUE CLEVELAND, OHIO
Feb. 9, 1937

United American Bosch Corp.
Springfield, Mass.

Gentlemen:

About a year ago, I wrote to you in response to your generator advertisements, in various motor magazines.

They seemed a bit too good to be true, however I gave you our type of trucks which were

You answered my letter and told me that your RKC 130/6-900 S58 changeover would do the trick.

Well gentlemen that was the best letter I have received for a long time, it sure took our truck operations out of the darkness.

We put on our first one on Oct. 20, 1936 as our work is all done at night and at high speed, where under such conditions we just could not keep batteries up or armatures in one piece. Since then we have installed four all told. I've been more or less on a vacation since 10-20-36 as far as our power wants were concerned. The batteries are better than camels as the first installation hasn't got thirsty as yet.

Sincerely yours,

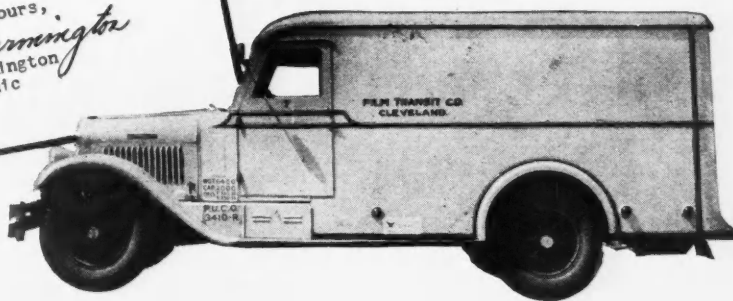
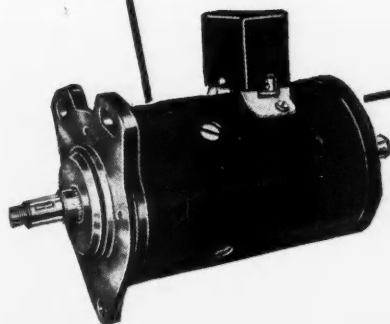
L. A. Warmington
Mechanic

...wrote a letter; looked into the Volt-O-Matic Generator...saved his boss time, worry and expense

TAKE a tip from L. A. Warmington, mechanic in the garage of the Film Transit Corp., Cleveland, Ohio. Ask your own mechanic to check up how much you can save in battery upkeep costs, with Volt-O-Matic Generators.

Learn what it means to have a generator that automatically takes over the work of the battery whenever the engine is running... automatically carries the lighting load... automatically maintains full charge in the battery... yet automatically safeguards against overcharge.

You take no chances with the time-tested Volt-O-Matic Generator. Time-tested...its design has been steadily developed year after year for 25 years. Time-tested...its precision craftsmanship could only be acquired after years of know-how. Time-tested...even the materials, specially developed for the purpose, reflect a most intimate knowledge of bus and truck fleet requirements. Write for booklet.



By installing Volt-O-Matic Generators on their vehicles, thousands of fleet owners throughout the country have insured themselves against the danger, delay and expense of road breakdowns due to battery abuse.

VOLT-O-MATIC  **GENERATOR**

UNITED AMERICAN BOSCH CORPORATION

SPRINGFIELD, MASS.

NEW YORK

CHICAGO

DETROIT

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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SAFETY

(CONTINUED FROM PAGE 47)

illustrated has a special rounded base to fit curved corners, while the second model fits flat surfaces. Both have visibility of 90 deg. in each direction for 500 ft., conforming to I.C.C. requirements.

8. Westinghouse Air Kit

The carton illustrated contains everything necessary to adapt the lighter commercial vehicle to Westinghouse Air Control, including an air compressor, reservoir, brake valve, brake chamber and all tubing

and fittings required to complete the installation. This equipment makes available to all light commercial units the identical features of safety and economy of genuine Westinghouse Air Brakes. It is made by the Bendix-Westinghouse Automotive Air Brake Co., Pittsburgh, Pa. The air compressor, heart of the air brake system, maintains a constant reservoir pressure, providing a stopping force more than adequate to meet every braking requirement. Compressors are available in a number of sizes to provide the proper stopping power for any type of commercial vehicle.

A hand-operated valve affords a separate means of control for trailers equipped with Westinghouse Air Brakes and new winter

protection for the braking system, the Alcohol Evaporator has been designed as a positive safeguard against a possible interruption of breaking efficiency in severely low temperatures.

9. Do-Ray Electric Flare

Do-Ray Lamp Co., 1458 S. Michigan Ave., Chicago, has a new electric flare which meets all state requirements. The conical-shaped red lens gives visibility in all directions without dark zones. A two-way switch permits either steady or flashing light. The flares are available either singly or in metal kits of three.

Improved McKay Chain

The McKay Multi-Grip Truck Chain, which features a double bar reinforcement of its own, has recently been modified by an alteration of the angle at which the two bars or lugs are mounted on each

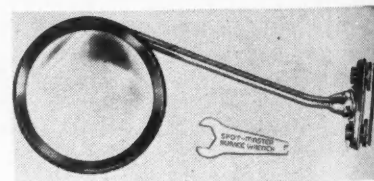


link. After thorough road tests The McKay Co., Pittsburgh, Pa., announces that this gets a still greater increase of durability from the bar reinforcement while fully retaining the marked advantage of extra traction and extra safety against skidding.

The company also has announced a truck-trailer safety chain free from frills but constructed to meet I.C.C. requirements.

Anderson Spot Master

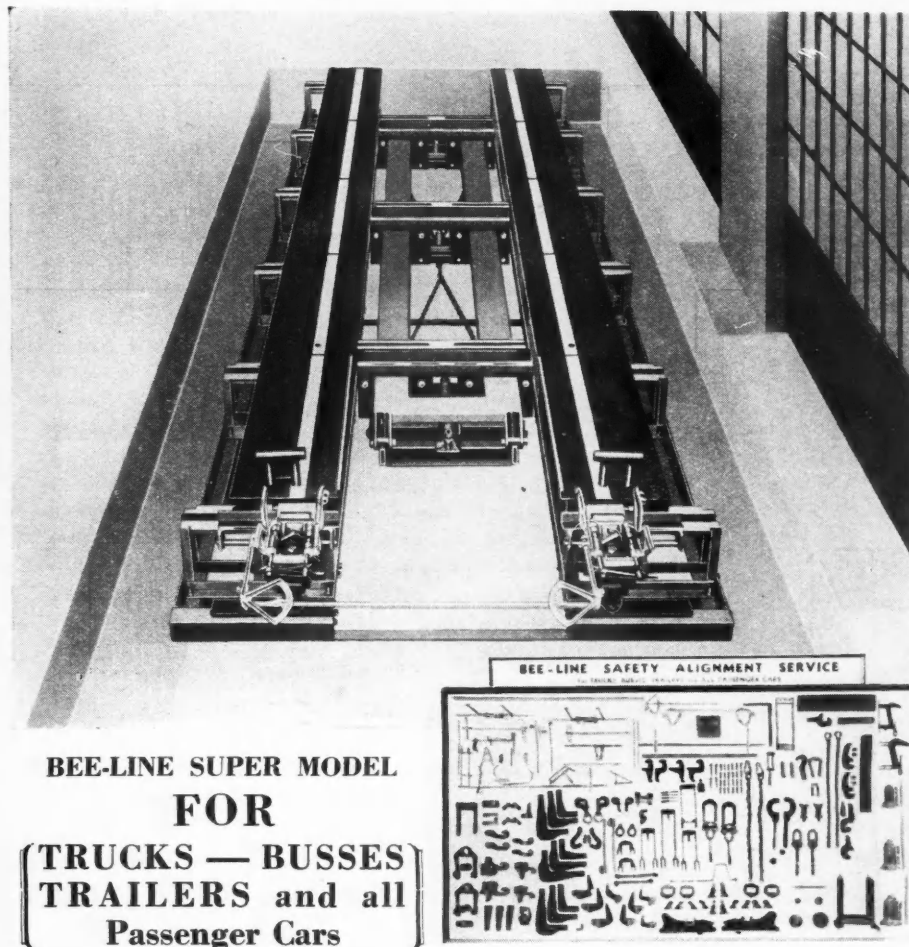
The Anderson Co., 957 Garfield St., Gary, Ind., has introduced a new rear-view mirror in which the glass is cemented into a copper shell in such a way that the back of the mirror becomes permanently sealed within a partial vacuum. The mir-



ror is also panoramic, in that the glass is curved to provide a wide range view of the full width of the road behind.

Jiffy Frost Remover

Blackstone Mfg. Co., Inc., 1436 S. Michigan Ave., Chicago, has recently developed (TURN TO PAGE 118, PLEASE)



**BEE-LINE SUPER MODEL
FOR
(TRUCKS — BUSES)
(TRAILERS and all
Passenger Cars)**

The ONLY Complete Automotive Aligner

This successfully proven Universal Super Model Bee-Line aligner saves unnatural tire wear—hard steering—shimmy — and eliminates excessive maintenance costs. Every fleet owner should see that his trucks, busses and trailers are serviced once each month on one of these nationally recognized Bee-Line Aligners.

On the Super Model Bee-Line Align-

er all parts of the chassis are accurately checked, including the frame, rear axle assembly, rear wheels, front wheels, front axles or suspension systems, and the geometry of the complete steering system.

Write today for more information and let us explain how you can substantially lower your maintenance cost.

BEE-LINE CO.

DAVENPORT

IOWA

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

Goes twice as far ON THE SAME
AMOUNT OF FUEL *at 1/4 the Cost*



go twice as far on the same amount of fuel as a gasoline motor truck. Furthermore, the cost of gasoline is four times higher than the cost of fuel oil in Portugal.

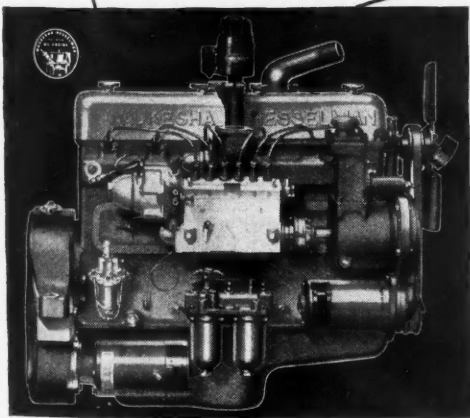
In Portugal . . . where gasoline costs four times as much as diesel fuel . . . trucks powered with Waukesha-Hesselman Oil Engines are rapidly gaining in popularity. Powered with a Hesselman a truck goes twice as far on the same amount of fuel as one with a gasoline engine. That means Hesselman has eight times the fuel economy of a gasoline engine.

These are facts and figures . . . based on the operation of fully loaded trucks, going up and down hills. A case in point is this Condor Truck loaded with six tons of baled paper. It is owned and operated by Fabrica de Matrina, a large paper mill in Thomar, Portugal. A heavy-duty truck, with a 3½ to 5 ton chassis, it is powered with a 6-cyl., 3¼ in. x 4¼ in., 232 cu. in. 6-BKH Waukesha-Hesselman Engine.

The Hesselman burns modern high-speed diesel fuels without either high compression pressures or high explosion pressures. Its *precisely timed* electric ignition gives easy starting, smoothness, low up-keep and longer life.

Write today for Bulletin 978

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
NEW YORK • TULSA • LOS ANGELES



WAUKESHA-HESSELMAN ENGINES

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

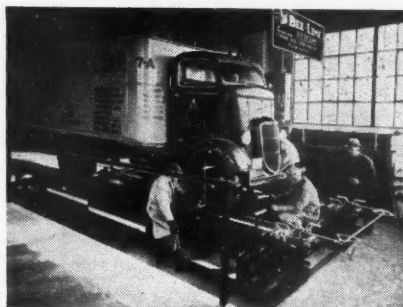
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(CONTINUED FROM PAGE 116)

a frost remover which comes in cake form covered with cloth, and fitted with a metal top. All that is necessary is to rub the frosted inside surface of windows or windshield. An application lasts from one to three hours, depending on outside temperatures.

Bee-Line Aligner

Bee-Line Co, Davenport, Iowa, now offers a new super model alignment machine capable of handling all truck models as well as passenger car equipment. With the new machine accurate alignment of front wheels, axles, frame and housing can



be easily made. Runways are 22 in. wide, adjustable to any tread, and a full complement of tools is available for any job.

THEY'RE DOING THESE 29 JOBS *quicker and better with their* **LINCOLN WELDER**

● This fleet repair shop in Glendale, Calif., recently changed over to electric welding. They report that their 150-amp. Lincoln Fleet Repair Shop Welder not only simplifies the ordinary jobs but enables them to weld jobs impractical by the other process. Here are a few:

Building up worn

worm shafts	wheel hubs
transmission shafts	shackle bars
axle shafts	clutch yokes
accessory shafts	bearing housings
clutch shafts	transmission forks
drive shafts	steps
spindles	treadle steps

Repairing broken

brake shoes	engine blocks
body brackets	cylinder heads
frame horns	compressor blocks
wheels	aluminum timing
rims	gear cases
battery frames	aluminum motor
generator brackets	cases
gear levers	aluminum cylinder
seats	heads

Users report savings of more than 50% by changing over to electric welding with this powerful motor generator type arc welder. You are bound to profit!

THE LINCOLN ELECTRIC COMPANY

Largest Manufacturers of Arc
Welding Equipment in the World

MAIL THIS COUPON TODAY

THE LINCOLN ELECTRIC COMPANY

Dept. AF -445, Cleveland, Ohio

Send a free copy of Bul. 314 and easy payment details on the Lincoln "SA-150" Welder.

Name _____ Position _____

Company _____

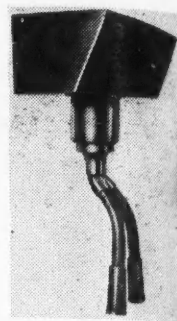
Address _____

City _____ State _____



Improved Lintern Sander

THE Lintern Traction Sander is now distributed by Bendix Westinghouse Automotive Air Brake Co., Pittsburgh, Pa. It is available in either air or electrically operated units. The air type requires only a negligible amount of air for operation, no additional air tanks or safety valves being required. The electrically operated valve works satisfactorily on as little as four volts. A unit control is conveniently located for the driver.

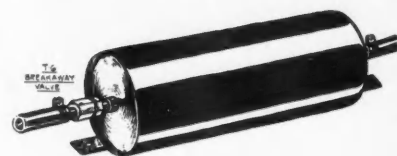


The illustration indicates the unique distributing feature of the Lintern Sander, which consists of a flexible rubber tube attached to the valve chamber, a cast "Y" which diverts the dropping sand into two equal streams (regardless of the tilt of the vehicle) and the entirely dependable flexible rubber nozzles that direct the sand immediately in front of each driving wheel. Standard size sand hoppers, water-tight, are available for truck and tractor applications.

Lintern Sanders for trucks and buses were first introduced about three years ago and are now in nationwide use by large motor truck and bus operators. Later on a smaller sander was brought out for passenger cars and has been meeting with noteworthy success.

Vel-Vac Brake Items

Two new trailer brake accessories have recently been developed by the Vacuum Power Equipment Co., 1644 W. LaFayette Blvd., Detroit—a vacuum reserve tank, and a trailer hose coupling. The reserve tank has a capacity of 1100 cu. in. and complies with I.C.C. requirements for brake-holding time. The trailer hose coupling



is of a new quick detachable design, but has the advantage of being interchangeable with other types, both male and female. Thus either of the units may be used for replacements in conjunction with existing equipment.

Red Burning Fusees

New style red-burning automotive fusees have recently been developed by the American Railway Signal Co. These comply with I.C.C. requirements for fusee equipment. An interesting feature is the folding tripod holder. Fusee may be left burning while truck gets under way, giving 100 per cent protection, yet leaving no spike to endanger following traffic.

(TURN TO PAGE 123, PLEASE)

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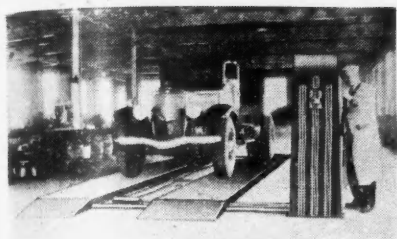
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SAFETY

(CONTINUED FROM PAGE 118)

Bear Brake Tester

The Bear heavy-duty truck hydraulic break tester, model 430, illustrated, has been specially designed to accommodate all truck sizes giving a quick and accurate



drive-on test. An added feature is the cable attachment which provides for accurate adjustment by holding the test for any length of time. The maker, Bear Mfg. Co., Rock Island, Ill.

Bear Headlight Tester

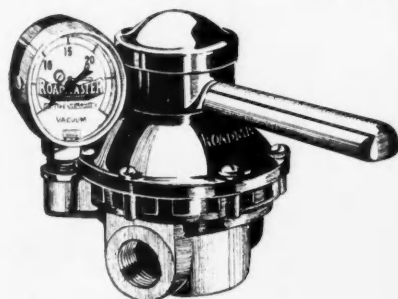
A headlight output meter now offered by the Bear Mfg. Co., Rock Island, Ill., provides a quick, economical check on headlight equipment. A cone-shaped body



concentrates all rays into a sensitive photo-electric-cell meter which reads directly on a table indicating poor, medium or good condition.

Roadmaster Vacuum Brake

When the brake pedal is depressed on a truck equipped with a vacuum brake made by the Roadmaster Power Brake Co., 2236 South Wabash Ave., Chicago, Ill.,



spring tension upon a self-seating ball diaphragm of impervious thiocol is increased and vacuum is permitted to pass through to the booster or power unit. When the force of the vacuum overbalances such

spring tension as has been set up the valve seats itself. Vacuum is always graduated by spring tension which the driver controls.

The hand valve while identical in principle has two important features. A gage indicates the amount of vacuum on hand and in use and the rotating head permits finger-tip adjustment of braking power to match tractive conditions of load and road.

Buell Wav-a-Way Signal

Buell Mfg. Co., 2975 Cottage Grove Ave., Chicago, has announced a new warning signal light known as the Wav-a-Way. Similar to equipment already used by po-

lice and fire vehicles and on certain high speed trains the light is said to give an effective warning to all traffic. The new light is mounted on the bumper bracket. A foot bottom operates the special mechanism so that a swinging beam of light is projected far ahead of the vehicle. Only the lamp and reflector move, the housing remains in a fixed position.

Wagner Auto-Motive-Air Brake

The air compressor of the air brake made by Wagner Electric Corp., St. Louis, Mo., receives its power from the pressure drop in the intake manifold. By employ-

(TURN TO PAGE 124, PLEASE)



Fleet Operators Are Turning To
BINKS THOR 7 Spray Gun by the Hundreds

Write Today For Binks New 60-page Catalog

BINKS MANUFACTURING CO.
3114-40 Carroll Avenue Chicago, Ill.



(CONTINUED FROM PAGE 123)

ing the vacuum available in the intake manifold in internal combustion engines as a source of power for compressor operation, a vacuum-driven compressor is used which compares very favorably with the steam-driven compressor used on locomotives, both in design and operation. It is double-acting, slow-speed, self-lubricating and fully automatic in operation. An oilbath air filter mounted in the atmospheric inlet of the slide valve box filters the air. Fifteen inches of vacuum available in the vacuum cylinder will pump the air tank to 75 lb., and stop or balance.

The foot control valve operation is simple and positive. Time lag is practically eliminated. Graduated control permits either partial or full air application. Air release may be made at any point of the pedal pad travel. Quick release and minimum waste air are two outstanding qualities of Auto-Motive-Air.

The Wagner Auto-Motive-Air system uses air cylinders for power application. These units incorporate new features in cylinder construction, such as inbored pis-

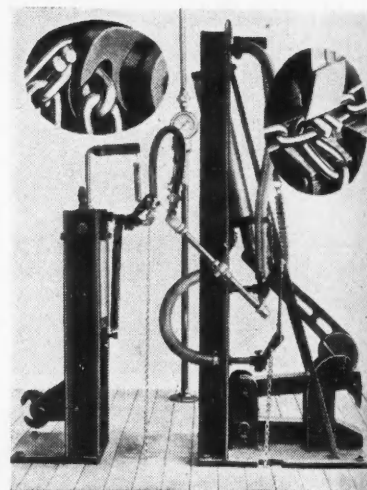
Right: The vacuum compressor unit of new Wagner air brake



ton bearing, minimum free air space ahead of piston, and the elimination of packing glands.

Pyrene Chain Repairer

A PYRENE power-driven chain repair machine, just introduced by the Pyrene Mfg. Co., 560 Belmont Ave., Newark, N. J., greatly facilitates tire chain repairing. Time for dismantling and reassem-



bling a complete set of chains has been cut to 12 min., according to the maker. Separate units for opening and closing links are operated from any air line with a minimum pressure of 100 lb. at 7.5 cu. ft. per min. Control is by a foot pedal which leaves both hands free.

Weed Chain Plier

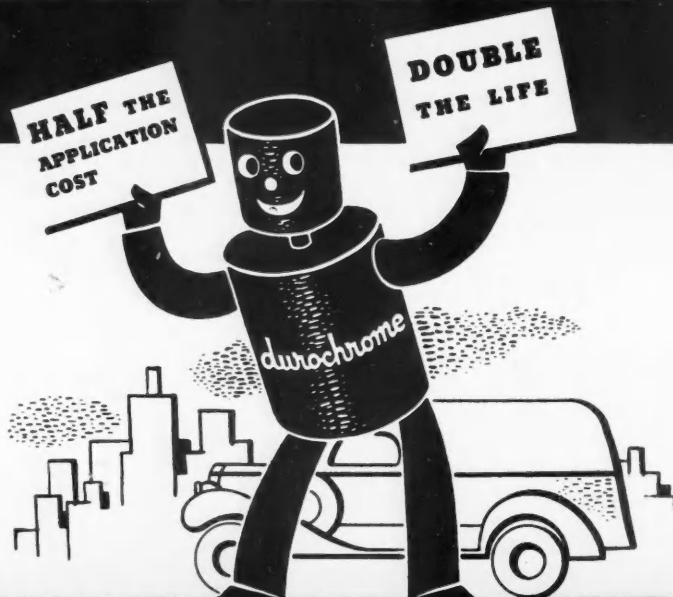
American Chain division of American Chain & Cable Co., Inc., Bridgeport, Conn., has introduced a portable tool to be known



as Weed 711 chain plier. Measuring about 2½ ft. from head to handle and made with high tensile steel, it combines easy leverage with durability. Fits all makes and sizes of chains.

(TURN TO PAGE 126, PLEASE)

TAKE THE TWO WAY PROFIT WITH durochrome TRUCK TRANSFERS



Save money—save time. End the truck lettering and decoration problem once and for all with DUROCHROME.

Durochrome is made of the same synthetic materials used in modern truck finishes. Durable, color-fast, lasts as long as the finish. New transfers must be put up only half as often—and the cost and time for each application are less than half. Applied with water only. Varnishing over the transfer is eliminated; DUROCHROME has its own built-in protection. No spoilage, wrinkling or peeling.

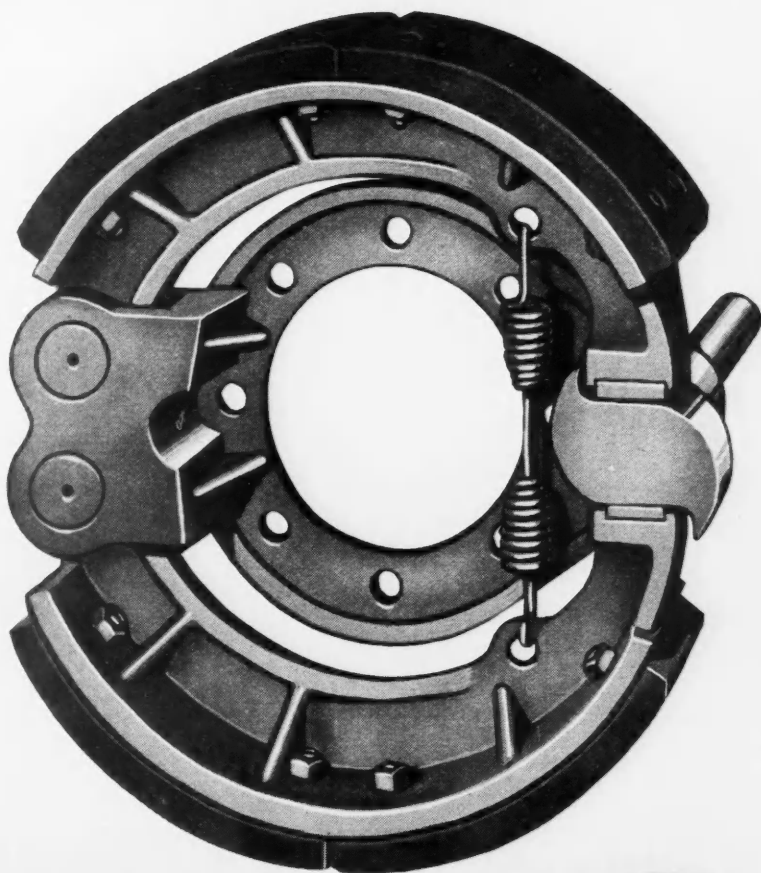
Do you operate 15 or more units? Then DUROCHROME will give you better looking trucks for less money. Already many leading fleets have switched to this revolutionary transfer. Get the full story, facts and samples by mailing the coupon.

Rayner-Consolidated Decal. Corp.
184-16 Jamaica Ave., Jamaica, N. Y.
Please send me full details, samples, etc.

Name.....
Firm.....
Address.....
Title.....

RAYNER-CONSOLIDATED DECALCOMANIA CORP.

184-16 Jamaica Ave., Jamaica, N. Y.
Chicago San Francisco



ANNOUNCING

THE

SHULER

HEAVY-DUTY

— a new and better brake!

HERE at last is the brake you've been wishing for — a brake with *maximum* stopping power, *maximum* life and *minimum* loss of efficiency after long, continuous service.

These new Shuler Heavy-Duty Brakes have specially-developed, extra-thick *molded* brake linings which are ground at assembly, to insure perfect drum contact. . . . Shoes have *hardened* wear plates, and the cams are of the constant-rise, uniformly-accelerated "S" type. . . . Special eccentric anchor pins insure shoe-centralization for the life

of the lining. . . . Cast alloy ribbed drums of special design prevent over-heating under even the hardest service.

These are only the "high-spots" of the spectacular new Shuler Heavy-Duty Brakes. By all means, get the whole story. Full descriptions and quotations will be gladly mailed you on request. Address: Shuler Axle Company, 2901 South Second Street, Louisville, Ky. *Detroit Office: General Motors Bldg.*

(CONTINUED FROM PAGE 124)

Midland Kits For '38 Chevrolet

The Midland Steel Products Co., Cleveland, announces that its vacuum brake kits for the 1937 Chevrolet are adaptable to the new 1938 model without change. These kits contain complete parts and instructions for assembly.

Yankee Lamps

Yankee Metal Products Corp., Norwalk, Conn., has recently added a line of fog lamps offered in either black or chrome finish and with various mounting brackets. Amber lenses are used. The company also

offers a complete line of clearance lamps, identification lamps, reflex reflectors and directional signals.

Emergency Flares

CentraLite emergency road flares made

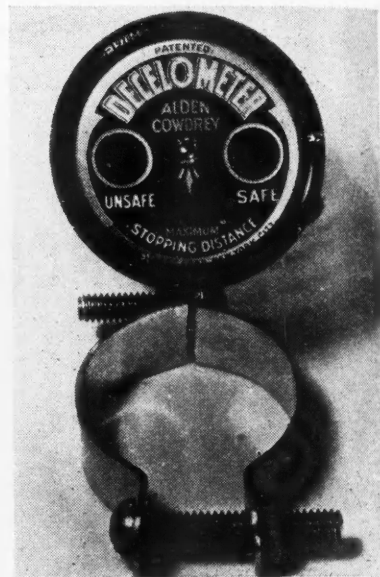


Newton, Mass., are now available to all by the Central Railway Signal Co., Inc.,

truck operators. Inspected and approved by the Underwriters' Laboratories, these emergency flares conform to the I.C.C. regulations for red burning fuses. A wire bracket permits mounting on any surface.

Alden-Cowdrey Decelometer

Alden-Cowdrey Corp., 122 E. 42nd St., New York, has recently placed on the market a scientific decelometer which flashes a red or green signal depending on whether or not brakes are within legal stopping limits. Invented by R. J. Alden



and developed in conjunction with General Electric engineers, the device contains an inertia operated mercury switch which closes contact with the proper light. A large shop model is designed for mounting on the floor while the smaller model, illustrated, clamps to steering post.

Loraine Lights

Representative of the complete line of Loraine auxiliary driving lights is the utility model illustrated. Developed for use particularly for public utility vehicles, the light has found wide use in through-the-roof mountings on all type trucks. The maker, Appleton Electric Co., 1701 Wellington Ave., Chicago, also offers a line of fog lights, a new oscillating warning signal light, as well as the well-known Loraine through-the-post driving lights.

**Fulton Rubber Fan**

Adding to its complete line of defrosting equipment, the Fulton Co., Milwaukee, Wis., has recently announced a new rubber-bladed fan available in either single or twin-fan models. The double type is mounted on a single bracket and either fan may be run independently of the other. (TURN TO PAGE 128, PLEASE)

Don't let
VIBRATION
bring the Fleet in

WEATHERHEAD
FLEXIBLE FUEL
LINE *The safe line for replacements*

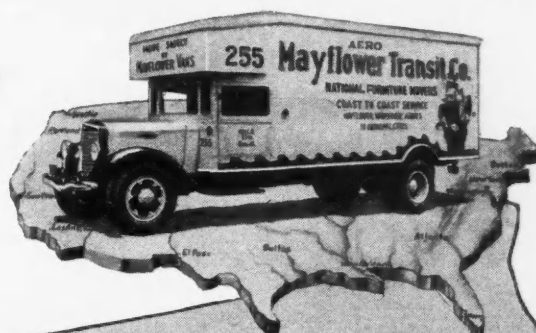
WEATHERHEAD
300 E. 131 ST. CLEVELAND, OHIO

TRANSPORTATION profits roll in only when the fleet rolls on... not when it rolls in for repairs. Vibration can quickly send it scuttling for the repair shop with broken fuel lines.

That's why truck builders use Weatherhead flexible fuel lines as original equipment. It's vibration proof and oil proof.

Play safe! Use Weatherhead for replacements and you'll put the fleet back on the road quicker and keep it there longer.

It's a wise move to move
with **MAYFLOWER**



Mayflower made a wise move when
they finished their trucks with
AUTOMOTIVE DULUX

REG. U.S. PAT. OFF.

WHETHER it's a move of one mile or a thousand, the Mayflower Transit Company are famous from coast to coast for fine service—quick, complete, safe, and economical.

They're also known for the spotless appearance of their sturdy vans. North, east, south, west—wherever you see Mayflower trucks, they look as though they had just come out of the paint shop.

Like so many other fleet owners, the Mayflower Company have found that

DULUX gives trucks finer appearances at lower cost.

Since trucks are exposed to all kinds of weather and hard driving, the finish must be durable—and DULUX is durable! Its elastic protective coat resists chipping and cracking . . . stands up under traffic gases, oils, greases, and sharp blows. Yet it keeps its high gloss . . . its smooth surface . . . its gleaming beauty.

DULUX may be applied by either

brush or spray in your own shop or in that of an Authorized DUOCO-DULUX Refinisher. And by reducing the frequency of the trips to the shop, DULUX can save you a pretty penny.

If your trucks look shabby in a short time and cost you too much in paint upkeep, ask a Du Pont representative to call and explain about DULUX. E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.



AUTOMOTIVE
DULUX
REG. U.S. PAT. OFF.

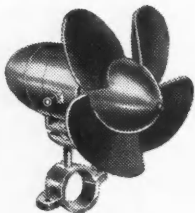


COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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(CONTINUED FROM PAGE 126)
Decker Fan & Guard

A flexible rubber blade fan, known as model 100, has recently been introduced by the Richard M. Decker Co., 1617 S. Michigan Ave., Chicago. Oil-less bearings are used and the motor draws $2\frac{1}{4}$ amp. at 3000 r.p.m. The company also announces an adjustable grille guard. The three round vertical bars may be moved up or down in relation to the

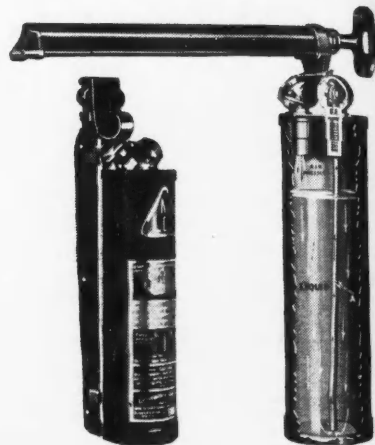


bumper, providing correct position for all bumper heights and also allowing for trunk lid clearance in the case of rear mounting.

Wilbur Fire Extinguisher

The Wilbur Extinguisher is entirely different from that of other pump-type extinguishers for its operating mechanism never comes in contact with the liquid, eliminating possibility of corrosion. It operates by pumping air pressure into the container, and forcing the fluid out. When in use, the pump is in the position illustrated at right, which places the weight of the container close to the operator's

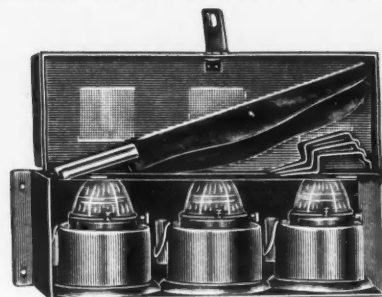
body. When not in use the pump folds against the container, this folding action



automatically closing both air and liquid valves. It is manufactured by the Wil-X Mfg. Corp., Brooklyn, N. Y.

USALite Flares

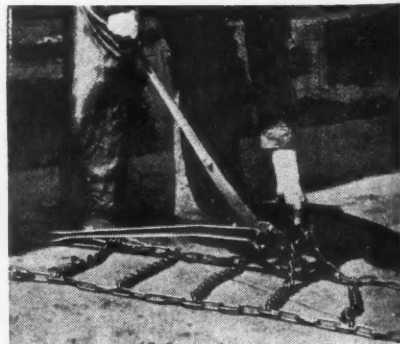
United States Electric Mfg. Corp., 222 W. 14th St., New York, has introduced a flashing electric flare which features a dome-shaped lens visible in all directions. Standard flashlight batteries are used and



a double circuit is provided for maximum protection. Passed by all states requiring approved equipment. Illustrated is the complete kit with three flares, flags, emergency brackets and extra bulbs.

Linkmaster Tool

H. K. Porter, Inc. Everett, Mass., has announced a portable tire chain tool that handles all sizes and all makes. The spreader points for opening the link, and the notched jaws for closing, are operated



by the same long handles designed for maximum leverage. Weighing but $6\frac{1}{4}$ lb. the tool can be taken right to the job.
 (TURN TO PAGE 130, PLEASE)

Warford



Warford Dual Axle Drive Multi-Wheeler Equipped with Warford Heavy Duty Transmission—Warford Fish Plates—Heavy Duty Front Springs—and Heavy Duty Power Brakes. This Is One of the Units Operating Regularly in the Lumber District of Canada Hauling Six to Ten Sleighs—Each Sleigh Loaded with Approximately Eight Tons Net of Logs.

Pick the WARFORD Way For Your Business Day

**MORE
TONS**

**MORE
MILES**

**LESS
COST**

Outfit your fleet with WARFORD Multi-Wheelers and watch the dollars roll in as your trucks roll out. WARFORDS give you heavy-truck capacity with light-truck economy.

WARFORDS take you anywhere with eight-wheel traction, stop you anywhere with ten-wheel braking. This goes for all types of roads in any kind of weather.

Warford engines cannot be overworked, for the extra gear ratios of the WARFORD Auxiliary Super-transmission provide power for any road grade or condition.

Take the WARFORD way to a better business day by seeing your Ford Dealer or the nearest Warford distributor.

THE WARFORD CORPORATION
44 WHITEHALL STREET, NEW YORK, N. Y.

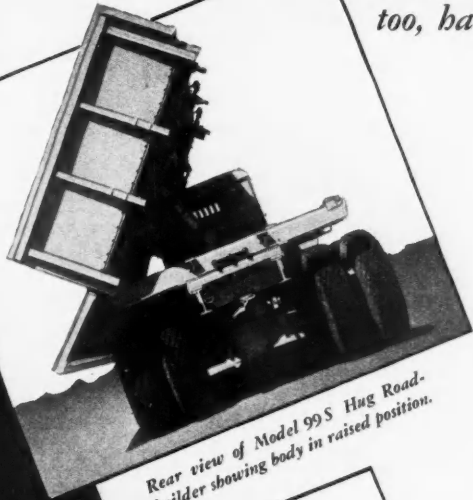
HUGS

are built to do a particular job Well!



Model 99 S Hug Roadbuilder delivered to Butler Bros. St. Paul, Minnesota, equipped with two-way side dump body. Truck being operated on ore mining project.

As in the case of Butler Bros. of St. Paul, Minnesota, you, too, have a particular hauling job that must be done well.



Rear view of Model 99 S Hug Roadbuilder showing body in raised position.



Side view of Model 99 S Hug Roadbuilder showing body in raised position.

Hugs are built to fit your specific hauling problem regardless of conditions. Their electric arc welded "I" beam frames, powerful gas or Diesel truck engines with a wide range of transmission speeds, double reduction rear axle and the many other sturdy features of design in the Hug body and chassis assures you a transportation unit that will haul and keep hauling payload after payload at consistently lower hauling costs.

Hug Roadbuilder trucks are adaptable for all types of dump truck service and can be furnished with dump body equipment to meet your requirements in either rear end dump or side dump bodies. Hug bodies are built as integral units with the Hug chassis, thereby assuring proper load distribution and design.

Let Hug engineers analyze your hauling problems and furnish you with the proper transportation unit for your requirements.

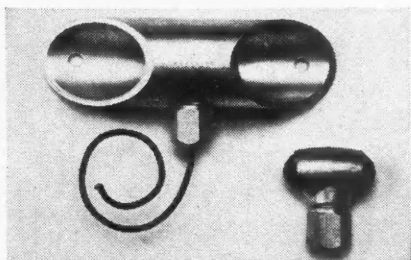


The HUG
COMPANY
700 CYPRESS ST.
HIGHLAND, ILLINOIS

(CONTINUED FROM PAGE 128)

Hartline Clearance Lamp

Cox Mfg. Co., Angola, Ind., has recently



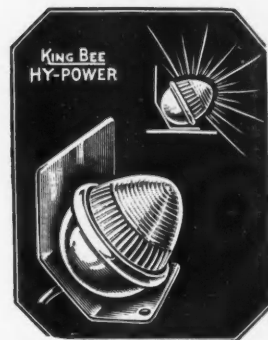
placed on the market an entirely new type

of clearance lamp known as the Hartline Indestructible. A 7-in. length of tubular steel with end cut away at sharp angles forms the heavy casing. Bulb and lenses, available in any color combination, are located in the middle, supported by a shock proof metal tee which forms the mounting. Full visibility forward and aft plus a wide arc to the side.

King Bee Lamps

The American Automatic Devices Co., Throop, Congress and Harrison Sts., Chicago, has recently introduced a new dual purpose clearance and side marker lamp. Four of these new Hy-Power lamps will

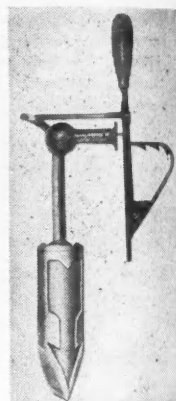
suffice in place of the usual eight, effecting an appreciable savings in purchase cost.



A specially designed bracket makes the light visible from all directions—the amber marker lamp being seen from the front, the red lamp from the rear. The company also offers a new fog lamp featuring a reflector made of special corrosion-resisting material. Furnished in either chrome or black, with amber or clear lens.

Aroflex Signal

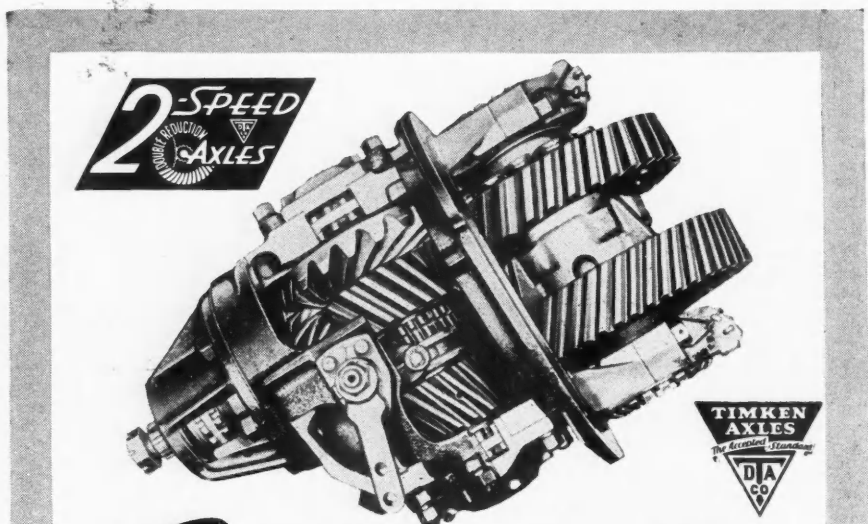
Aroflex Auto Signal Co., 4957 Sunset Blvd., Hollywood, Calif., is offering a hand-operated directional signal, designed for mounting through the side of cab. The handle is on the inside, accessible to the driver. The illuminated Arrow is made of one-piece glass covered by polished brass. An amber light in the end gives adequate warning to traffic approaching from the side. Electric circuit is turned on automatically when signal is raised.

**High-Powered Lantern**

In addition to low-powered inspectors, the Carpenter Mfg. Co., Cambridge, Mass., has developed a complete line of high-powered portable hand searchlights and flood lights, both rechargeable battery and dry battery types. The illustration shows new Type T&T made for American Tel. & Tel. Co. It is compact, light weight, uses two No. 6 dry cells, will illuminate objects up to 1/4-mile away. Can also be supplied with a rechargeable battery.



(TURN TO PAGE 132, PLEASE)



**Cut Hauling Time..
Cut Hauling Cost..**

You'll cut the time of hauls by increasing vehicle speed—one speed for levels, another for grades

TIMKEN 2-Speed AXLE

You'll cut costs—get top engine-efficiency all the time, save fuel

TIMKEN 2-Speed AXLE

You'll get—if you're wise—the big, husky Wisconsin Double Reduction gearing found only in

TIMKEN 2-Speed AXLE

How to combine maximum pulling ability, road speed and fuel economy, is clearly told in a booklet explaining "The Economy Zone." Mailed on request.

THE TIMKEN-DETROIT AXLE CO., Detroit, Mich. • WISCONSIN AXLE DIVISION, Oshkosh, Wisc.



WE STOP THEM ALL SAFELY!

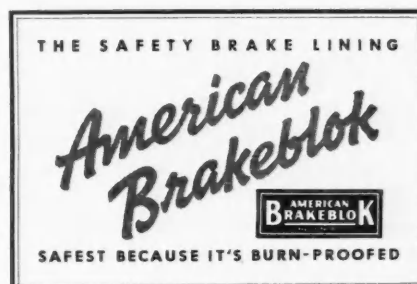
Traveling safely at high speed is a matter of *control*. Whether riding in a train, a bus, an airliner landing at a mile-a-minute, or your own automobile, safety depends on being able to *stop in time* in any situation.

For more than 50 years our companies have specialized in the problem of braking. First we supplied brake shoes for railroad trains and street cars. Then we developed a new type of brake lining for motor buses and trucks. This was so successful that we adapted it for passenger automobiles and motorcycles—and now for airplanes.

Different materials are used, of course, but the

basic problem of controlling speed safely is the same, and calls for broad engineering experience in the field of braking.

As a truck operator you can reduce your accident risks—and save money on brake upkeep—by using American Brakeblok. It stops the heaviest and the lightest trucks with equal ease.



AMERICAN BRAKEBLOK • DETROIT, MICH. • DIVISION OF AMERICAN BRAKE SHOE AND FOUNDRY COMPANY
 COMMERCIAL CAR JOURNAL
 NOVEMBER, 1937

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(CONTINUED FROM PAGE 130)

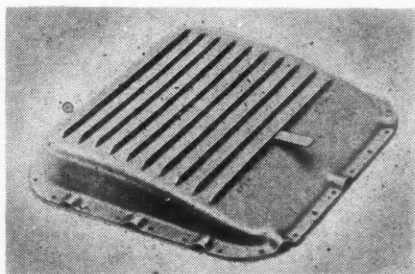
Hi-Way Fusees

Hi-Way Safety Appliance Co., Box 66, Highland Park Station, Des Moines, Iowa, has recently placed on the market a complete line of highway type fusees, featuring a simple mounting stand which replaces the conventional spike. 10, 15, 20 and 30 min. sizes are available.

Keystone Ventilators

Electric Service Supplies Co., 17th and Cambria Sts., Philadelphia, offers the Keystone line of exhaust-type roof ventilators. Illustrated is type D designed for outside operation, and particularly adapted for

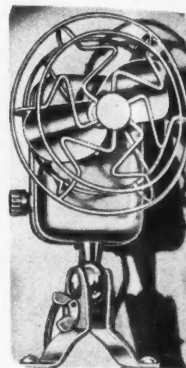
ventilating truck bodies. Other models provide inside control levers. All models



are constructed to prevent water leakage, accumulation of leaves, etc.

Powr-Pakt Defroster

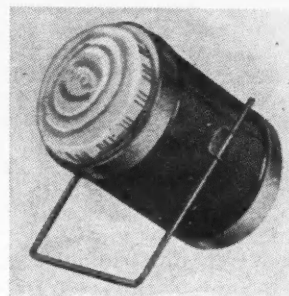
Alliance Mfg. Co., Alliance, Ohio, offers a compact, economical electric defrosting fan known as Powr-Pakt. Current consumption is $\frac{1}{2}$ to $\frac{1}{10}$ that of average full-sized models according to the manufacturer. Complete with universal bracket.

**Warner Break-Away Assembly**

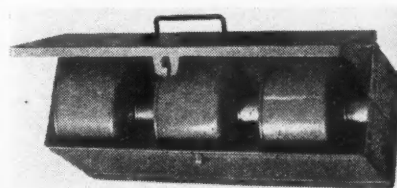
Warner Electric Brake Mfg. Co., Beloit, Wisc. calls attention to its unique trailer emergency break-away assembly, which, when used in conjunction with electric brakes on the trailer, amply complies with I.C.C. emergency requirements. The whole outfit consists of a chain attached to the connecting cable, a simple pull-on switch and a dry cell battery. Should the cable part, the chain pulls on the switch and the battery has sufficient capacity to hold brakes for over 30 min.

Bolser Safety Equipment

Bolser Corp., Cedar Falls, Iowa, has recently made additions to their line of safety equipment. A new electric flare, cylindrical in shape, features a red lens in the top and emergency red reflector in the bottom.

**Anthes Safety Line**

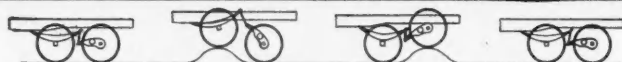
Anthes Force Oiler Co., Ft. Madison, Iowa, has announced a full line of truck type safety flares, fuses, flags and related equipment. The Anthes master "Truflar," illustrated in kit of three, is extra heavy,



conforms to all regulations and guaranteed leak proof. There are also three lower priced liquid-burning models and a brand new line of economical electric flares furnished complete with individual or triple streamline cases. These are designated as the "Lektroflar."

TRUXMORE

WORLD'S BEST 3RD AXLE



Illustrated above is a 136" wheelbase cab over engine truck equipped with TRUXMORE 3rd axle carrying an 18' ft. body.

Streamlined Economy with TRUXMORE

Increased profits from added revenue with bigger bodies and plenty of loading space for heavy or bulky loads . . . All the advantages of short wheelbase trucks . . . Smaller turning radius . . . Easier to handle in and out of city traffic and over the highway with the safety, comfort and economy found only in Truxmore equipped vehicles. These are some of the advantages enjoyed by some of America's leading industries thru the use of cab over engine trucks equipped with Truxmore 3rd Axles . . .

TRUXMORE IS MADE IN 5 SIZES TO FIT ANY MAKE TRUCK
DISTRIBUTORS IN PRINCIPAL CITIES

New York
Syracuse, N. Y.
Binghamton, N. Y.
Rochester, N. Y.
Erie, Pa.



Chicago, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Boston, Mass.

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TO ASSURE that each light of Duplate is a quality product throughout, skilled workers smooth its corners by hand on this machine, completing the work already begun by the automatic edging machines.



DUPLATE
Safety **PLATE** *Glass*

**QUALITY SAFETY GLASS
PROVED BY PERFORMANCE**

DUPLATE'S record speaks for itself. In actual performance over a period of years, it has proved that it renders more dependable and more economical safety PLATE glass service. Made of the finest mechanically ground and polished PLATE glass, it reduces eye-fatigue . . . helps to minimize the road glare seen through it. And Duplate's flawless, smooth surface complements the attractiveness of equipment in which it is used. That's why so many operators are insisting on Duplate all around when they order new equipment. And that's why it's good business for you to call your nearest Duplate dealer when you need glass replacement work done.

Paint * **PITTSBURGH** * *Glass*
PLATE GLASS COMPANY

DUPLATE SAFETY PLATE GLASS

DUOLITE SAFETY PENNVERNON GLASS

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NOVEMBER, 1937

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SHOP EQUIPMENT

(CONTINUED FROM PAGE 55)

dropping or dragging on the floor.

The newly-developed Sioux Fan delivers four times the usual volume of air at working speed. This results in a cool-running, long-life motor.

The Cushion Drive is a split gear assembly which absorbs shocks and vibration.

The No. 1255 Two-Speed Sander uses 7-in. and 9-in. sanding discs. Shifting a gear lever changes the speed . . .

4250 R.P.M. for 7-in. discs, 3500 for 9-in. disc.

No. 1250 Sioux 7-in. Sander operates at 3500 R.P.M. Powerful and light in weight. Ball bearing throughout.

6. Joyce-Cridland Lifts

The Joyce-Cridland Co., Dayton, Ohio, have a complete line of hydraulic lifts. Pistons are made in diameters from 9½ in. to 17¾ in. giving a load capacity range of from 8000 lb. to 54,000 lb. They are turned from seamless steel tubing with mirror finish. Five layers of chevron shaped graphite impregnated

packing are used with binder strips top and bottom. Oil pressure from below seals the packing; the greater the oil pressure the greater the spread of the chevrons.

7. Walker Unit Lift

The unit lift made by the Walker Mfg. Co., Racine, Wisc. has a low lifting point of 3 in. and it raises 22 in. The cap size is 10 in. by 10 in. fitted with four adjustable grips cone pointed and hardened. It is 48 in. long and 20 in. wide. The highest point of the frame is 9 in. It has a capacity of 1000 lb. and weighs 138 lb.

8. Van Dorn "Shorty" Drill

The new "Shorty" drill meets all requirements, with a new idea in drill design. The chuck spindle is mounted at right angles to the motor—and reduces the overall working length of the tool to 4½ in. The motor housing dimensions have also been reduced to a minimum—so that the tool fits snugly in the operator's hand, and requires no extra handle.

An ingenious ventilating arrangement assures cool motor operation. The unit is ball-bearing equipped throughout and has a universal motor which operates A.C. or D.C. A removable insulated cap provides easy access to brushes for inspection. Thumb control switch is in the line just back of tool. Made by Van Dorn Electric Tool Co., Towson, Md.

Walker Electric Lift

The electric lift made by the Walker Mfg. Co., Racine, Wis., can be installed over a basement or on a second floor as all operating mechanism is located above ground. The average installation requires only a few hours. There is no center web construction to obstruct accessibility to all parts of the under side of vehicle. It is driven by a one horsepower motor and will raise a capacity load in 52 seconds.

Lincoln Oil Dispenser

The new Lincoln Model 497 Motor Oil Dispenser dispenses motor oil into a crankcase with the same speed, accuracy and efficiency with which the modern gasoline pump fills the gas tank.

This new motor oil dispenser, manufactured by the Lincoln Engineering Co., St. Louis, Mo., is a complete dispensing unit, consisting of a 68-gal. container, automatic air operated pump, Lincoln meter with quart dial, 12-ft. hose and control valve with non-drip nozzle.

Large opening for refilling the container. Pump is securely attached to lid from the underneath side, and lid is sealed when closed. Meter has a totalizer which provides record of oil dispensed.

Lincoln Lubrigun

Lincoln Model 310 Twin Cylinder Air-line Lubrigun is a new portable unit for dispensing chassis lubricant. It has been recently added to the line manufactured by the Lincoln Engineering Co., St. Louis, Mo.

The Model 310 Lubrigun embodies the (TURN TO PAGE 136, PLEASE)

Don't SKIMP ON DOOR FITTINGS

Those doors are the movable parts of the body and can stay snug and tight only as long as the fastenings resist wear. If the bearing surfaces of the locks and hinges are skimpy, a rattling, sagging door is a sure result. Eberhard door hardware is designed to resist wear, with generous bearing surfaces on all guides, pins and bushings. The owner of a hard-working, Eberhard-equipped truck enjoys lower maintenance costs, as well as a greatly extended period of trouble-free and rattle-proof operation. It will pay you to see your jobber or write direct for complete information.

EBERHARD
DOOR LOCKS AND HINGES

FULL DETAILS IN NEW CATALOG NO. 11

EBERHARD MANUFACTURING CO.
Division of The Eastern Malleable Iron Company
CLEVELAND, OHIO

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TOLEDO AEROTYPE VALVES



FOR RUGGEDNESS, RELIABILITY AND LONG LIFE

Toledo Aerotype Valves will improve the motor efficiency of the trucks or buses in your fleet. They assure more gasoline mileage, less time lost through repair delays. Made of Silchrome-X, with Stellite applied to valve seats and stem tips, Toledo Aerotype Valves have much greater resistance to heat, corrosion, battering and wear than ordinary valves. Each valve is individually designed for the particular motor for which it is recommended.

For more economical fleet operation, install Toledo Aerotype Valves. Your Toledo jobber has complete information.

THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

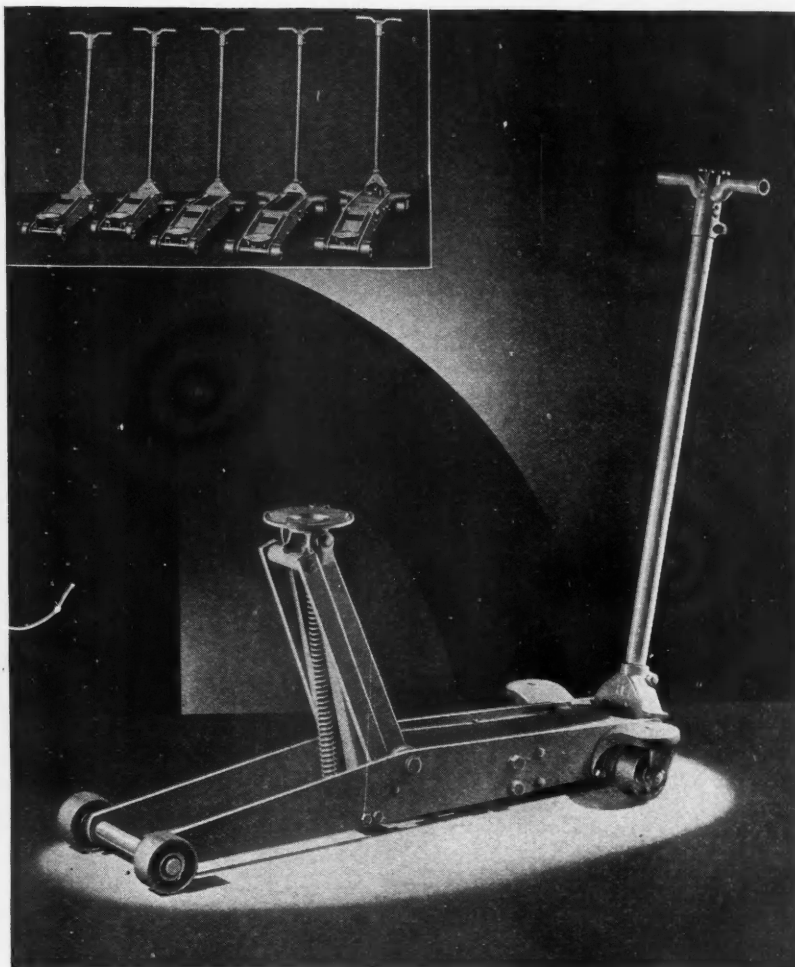
Atlanta, 279 Ivy Street, N. E. • Boston, 702 Beacon Street • Chicago, 1225 South Wabash Avenue • Cleveland, 2209 Ashland Road
Dallas, 2805 Commerce Street • Detroit, 443 East Fort Street • Kansas City, 14th and Oak Streets • Los Angeles, 1341 South Hope Street
Minneapolis, 21 South 13th Street • New York, 17 W. 60th Street • Philadelphia, 1839 Wylie Street • Portland, 408 N. W. 12th Avenue
San Francisco, 528 Larkin Street • St. Louis, 3150 Locust Blvd.



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Built for Service



HEIN-WERNER HYDRAULIC FLOOR JACKS are dependable

You will find that Hein-Werner Floor Jacks stand the gaff. All five models are brutes for punishment, and are amazingly dependable even under unusually severe service conditions.

These jacks are not only built right, but they are also priced right—and all are exceptional values.

All these floor jacks made by Hein-Werner have structural steel side members . . . Low at 4", and saddle high point at 24½" . . . 90° stroke on handles . . . Saddles are 6½" in diameter, and are designed to keep load from slipping.

All models in this line have steel hydraulic units except Model 0324G . . . All have safety valves and by-passes, and automatic oil level . . . And all have re'ease valves that can be locked and key removed.

MODEL 0237J—FLOOR JACK (without swivel wheels) . . . 2 ton capacity, \$29.75 (West Coast \$34.50).

MODEL 0237K—FLOOR JACK (with swivel wheels) . . . 2 ton capacity, \$33.50 (West Coast \$39.50).

MODEL 0237L—FLOOR JACK, 2 ton capacity, \$39.75 (West Coast \$42.75).

MODEL 0337H—FLOOR JACK, 3 ton capacity, \$49.50 (West Coast \$55.00).

MODEL 0324G—FLOOR JACK, 4 ton capacity, \$57.50 (West Coast \$63.00).

All prices shown above are net . . . Ask your jobber, or write us for details on these floor jacks—also on complete line of passenger car and truck hand jacks.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

FEW MODELS ENGINEERED TO DO THE WORK OF MANY

HEIN-WERNER
hydraulic JACKS

(CONTINUED FROM PAGE 134)

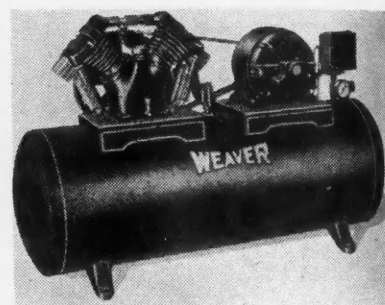
two-stage principle. The primer pump reaches to the bottom of original container and with slow, powerful stroke, feeds the lubricant to the high pressure pump, which delivers lubricant under high pressure to the hose outlet.

Unit is furnished complete with 10 ft. high pressure hose assembly, control valve and nozzles for all fittings and Flex-O-Matic Air Coupler. Width 19 in., height 40 in., length 25 in. Shipping weight, 162 lb.

Weaver's New Air Compressors

The Weaver Mfg. Co., Springfield, Ill., has just announced a series of single and two-stage models in sizes from ½ to 5 hp.

With an elaborate system of intercoolers and aftercoolers, Weaver compressors deliver air to the storage tank less than 20 deg. above room temperature, thus avoid-



ing shrinkage due to excessive cooling in the tank, which lowers pressure and compels the unit to start again for recompression.

Starts and stops represent a waste of power—hence the compressors which are carefully designed to avoid them are able to deliver more usable air per kilowatt-hour of current consumed.

Exide Battery Chargers

ELECTRIC Storage Battery Co., Allegheny Ave., and 19th St., Philadelphia, Pa., has introduced a complete new line of battery charging equipment, including deluxe and standard models with built-in Exide Sure-Start Testers; also a complete line of utility chargers designed for either wall or floor mounting. The standard model, illustrated, consists of an open rack with charging positions for six batteries on two shelves. The built-in Tester is a new model Exide Sure-Start Tester No. 45.



Dynamic Arc Welder

This is an arc welder that can be used on all types of automotive work that sells for \$19.75. It is made by the Dynamic (TURN TO PAGE 138. PLEASE)

TRUCKTOR

**URNS FOUR-WHEEL
TRUCKS INTO
SIX-WHEEL TRUCKS
FOR RECORD
LOW COST HAULING**

**AND HIGHEST
YEAR-ROUND INCOME**



**TRUCKTORED SIX-WHEELERS GET THRU IN WINTER
UNDER CONDITIONS WHERE FOUR-WHEELERS
AND TRACTOR-TRAILERS CANNOT OPERATE**

**CREATES "FULL PAYLOAD"
VEHICLES THAT DO NOT
REQUIRE THE
COSTLY TONNAGE OF
DEADWEIGHT PARTS**

**ESSENTIAL TO
TRACTOR TRAILERS**



BECAUSE of hard facts and figures, many fleet operators, including some of the largest in America, are utilizing **TRUCKTORED Six-Wheel Trucks** in increasing numbers for heavy hauling.

This trend is indicated in oil and other major industries, where fleets are under engineering supervision and cost finding must be accurate.

Here are A FEW WHYS:

Two types of vehicles are available for heaviest hauling—six-wheel trucks and tractor-trailers.

Where one tractor is able to handle several trailers in shuttle or short haul work, the tractor-trailer is supreme.

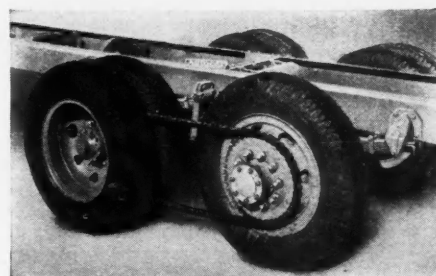
Where the feature of detachability is not needed, as on numerous long haul operations, the massive fifth wheel structure and extra length of tractor vehicle add a deadweight burden whose cost, whether figured in loss of payload or at tonnage rates per mile, runs into thousands of dollars during the life of the truck.

THREE FACTS WORTH REMEMBERING

1. **WEIGHT!** A Tractor-Trailer weighs from $\frac{1}{4}$ to $1\frac{1}{4}$ tons more than a Trucktored Six-Wheeler of same capacity.
2. **SAFETY!** Insurance companies charge rates 25% and more higher for a trailer vehicle than for a Trucktored Six-Wheeler.
3. **ALL WEATHER SERVICE!** A Trucktored Six-Wheeler will operate under bad road conditions that will stop other heavy-haul vehicles dead. Its **DETACHABLE CHAIN AND SPROCKET 4-WHEEL DRIVE** furnishes the extra traction to drive the load through snow and mud and safely over ice. The chains of this husky drive are attached or detached in a few minutes without removal of wheel. Trucks generally require such aid only 5% or 10% of the time. Detachability makes the drive a help only when needed—puts no drag on progress when not needed.

Know what others know about TRUCKTOR—Let Us Tell You!

**TRUCKTOR →
DETACHABLE
CHAIN AND
SPROCKET
FOUR-WHEEL
DRIVE
U. S. PAT. No. 1,862,779**



TRUCKTOR IS TRUCK-MATED . . BECOMES INTEGRAL WITH TRUCKS OF ALL MAKES AND CAPACITIES

THE TRUCKTOR CORPORATION • 156 WILSON AVE., NEWARK, N. J.

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(CONTINUED FROM PAGE 136)

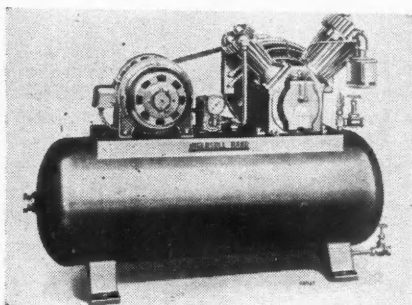
Welder Co., 2226 Silverton Rd., Chicago, Ill. Does both carbon arc and metallic arc welding and works on iron, steel, tin, brass, copper and other metals. It derives its current from a 110-volt socket.

Brake Service Department

The Stiles-Barrett Corp., 2741 Washington Blvd., St. Louis, Mo., are featuring a complete brake service department. This includes the brake relining machine, the lining grinder and brake dokter as well as the smaller units such as tools and fixtures for doing complete brake service work. Each item of the department is available separately.

Ingersoll-Rand Compressors

The type 30 two-stage air compressors

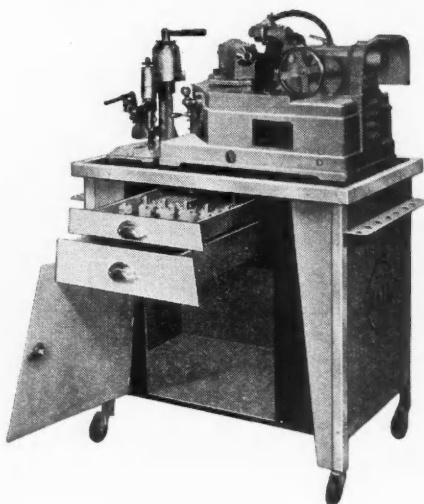


made by the Ingersoll-Rand Co., Phillipsburg, N. J., have a 200-lb. continuous

service rating, automatic stop and start control, totally enclosed centrifugal unloader and a ball-bearing compressor. The crankcase is closed and the valves are stainless steel. There is an inlet filter and muffler and heavy seamless steel tanks. General electric motors are used. Piston displacement runs from 3.9 cu. ft. to 41 cu. ft. in graduated sizes.

Hall Valve Shop

The Hall Mfg. Co., Toledo, Ohio, has a complete Valve Shop with which the ser-

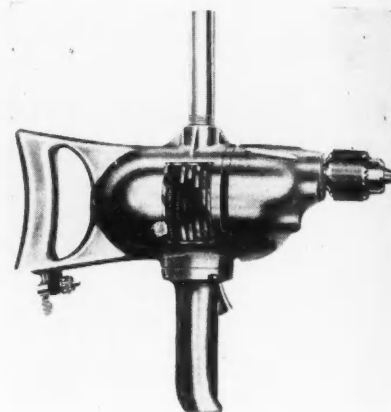


vice shop can render a complete service on all types of valves and valve seats for

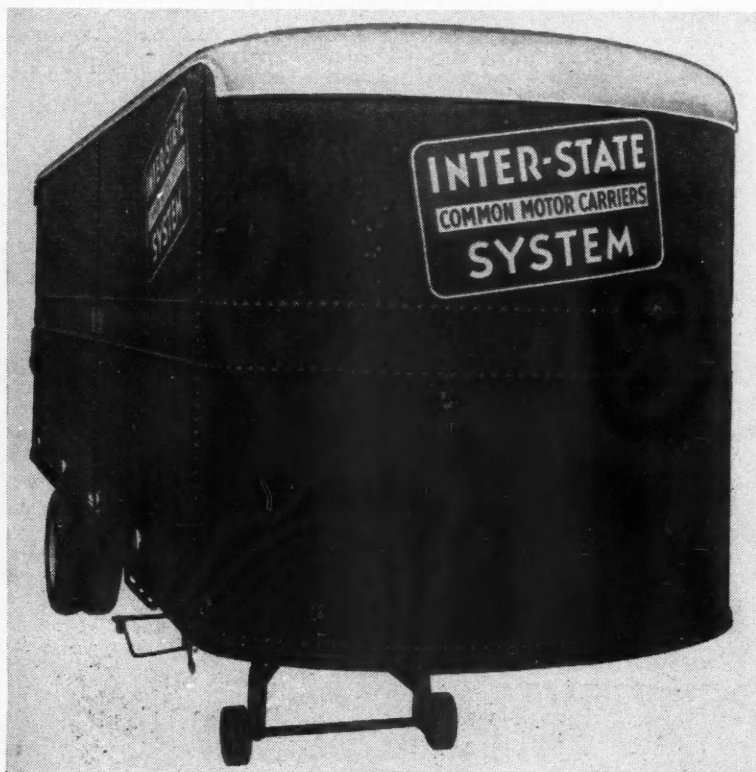
all cars, trucks, buses and tractors. The cabinet is heavy sheet steel of welded construction. Two large drawers are provided for grinding wheels, pilots, gages, tools, etc. The Refacer shown is the Hall No. 60, wet type valve refacer. It is powered with two motors and work head has rheostat-controlled variable speed. A micrometer adjustment enables the operator to remove exactly the amount of metal necessary to provide the proper clearance between valve stem and lifter.

Van Norman Drills

Most recent addition to the line of automotive service equipment made by the



Van Norman Machine Tool Co., Springfield, Mass., is a line of electric drills



Dealers want it...

Quick sales . . . rapid turnover . . . PROFIT.

Truck and fleet operators want its engineered quality . . . its extra operating profit from years of economical, trouble-free service.

A few protected territories are still available to established truck distributors. No factory competition. Nationally financed through C. I. T. Wire or write for complete proposal.

SUPERIOR TRAILER MANUFACTURING CORPORATION
Indianapolis, Indiana

● From its pressed steel, all-electric-welded frame to Timken Bearings and Booster operated brakes, Superior Trailers are the final answer to efficient, inexpensive, economical trailer service. Competitively priced.

SUPERIOR TRAILERS

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LITTLE GIANT

AUTOMOTIVE TRUCK EQUIPMENT

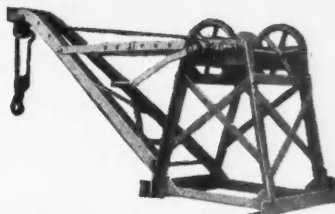
Sturdy, Efficient, Dual-Speed, WRECKING CRANE



The Product of 20 Years Experience

Like all Little Giant products, the new Wrecking Crane is powerful, sturdy, service-free. Dual-speed increases strength and saves valuable time. Automatic lock. Adjustable boom. Chain or cable optional. 2½ and 3 ton sizes. Unconditionally guaranteed.

Helps to expand your business and profits, at very little cost. Brings the new car prospect right into your place of business. Opens the door to profitable towing fees, repairing and parts sales.



Write for Circulars and Dealer Details

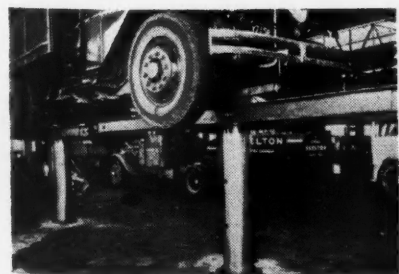
LITTLE GIANT PRODUCTS, Inc.
1532 N. Adams St. Peoria, Ill.

(priced from \$18.00 up) with a full complement of sanders, grinders, wire wheel brushes and hole saws.

These tools are designed for more power, smoother performance, longer life. Motors are larger, with extra-large built-up commutators. Insulation is heavier. Pig-tail brushes are larger. Other features include new double pole, totally enclosed switches with generous overload capacity, and wider-faced gears. Perfect ventilation is maintained by a centrifugal fan on the armature shaft.

Globe Hoist

Globe Hoists made by the Globe Machinery & Supply Co., Philadelphia, Pa., have two complete hydraulic rams each having a lifting capacity of 16,000 lb. under 125 lb. of air pressure. Each ram has its own superstructure with 6-in. H-beam rails reinforced to afford strength beyond the 16,000-lb. rating. Each post may be used as a separate lift or may be swung

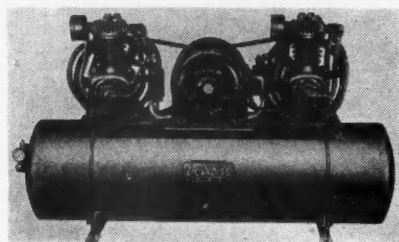


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into a tandem position for lifting a single long wheelbase job.

DeVilbiss Compressor

DeVilbiss Co., 300 Philips Ave., Toledo, Ohio, has four new air-compressing outfits available in 7½ or 10 hp. with single or two-stage compressors available with either



horsepower. Two compressors, each developing a maximum pressure of 200 lb. with the two-stage compressors of 150 lb. with the single stage, are firmly mounted on opposite ends of the 20 x 60-in. air tank.

Each compressor has a "V" belt drive, combination air strainer and muffler, check valve, inter and after cooler, and centrifugal pressure release mechanism set to cut in at 160 lb. and cut out at 200 lb. on the two stage, and in at 80 lb and out at 100 lb. on single-stage compressor. Displacement of outfits varies from 31½ to 57 cu. ft. of free air per minute, depending upon pressure and horsepower. Air tank capacity of both 7½ and 10 H.P. outfits is 10.88 cu. ft.

SAFETY LIGHTING

SAFETY . . . the keynote and uppermost in the efforts of commercial car owners . . . SAFETY the dominant thought in designing and building K-D LAMPS. SAFETY when you buy . . . SAFETY when installed.

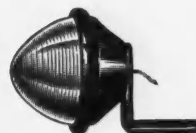
Write for chart of I.C.C. Regulations



K-D MASTER
Fog Lamp



Model No. 325
TRIFLEX
Reflector



Model No. 506
Clearance Lamp

THE K-D LAMP CO.
CINCINNATI, OHIO

Federal Dial Gages

The Federal Products Corp., 1144 Eddy, Providence, R. I., are making a new model 2 universal test type of indicator which is graduated to read in .0001 in. The model 1 which reads in .001 in. has a range of .030 in.

Aro Flushing Oil Heater

Flushing oil may be heated quickly, safely and conveniently in the new electrically operated and thermostatically controlled Flushing Oil Heater recently announced by the ARO Equipment Corp., Bryan, Ohio.

The container has a capacity of 6½ qt. —more than double the amount required for a thorough job of gear flushing. The heater unit is of latest design, fully enclosed, and is equipped with an 8 ft. heavy duty cord and plug.



(TURN TO PAGE 140, PLEASE)

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SHOP EQUIPMENT

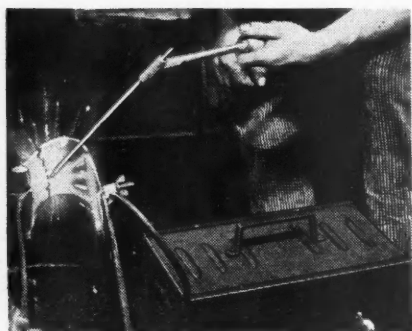
(CONTINUED FROM PAGE 139)

Black and Decker Valve Shop

Black and Decker Mfg. Co., Towson, Md., have a valve shop with a new refacer. The new refacer has an improved feed screw bearing construction in the work table and wheel head to insure against side play and a completely re-designed micrometer valve stem grinding attachment with perfect alignment and accurate feed. The cabinet has been re-designed for greater accessibility, better construction and improved appearance.

Trindl Arc Welder

Trindl Products, 2227 Calumet Ave., Chicago, Ill., has an easily portable arc welder that sells complete for \$48. This device has 33 heat ranges and can be



operated by a mechanic with no welding experience. It will do heavy jobs as the efficient cooling makes it possible to run the machine continuously over long periods of time. It works on all kinds of metals.

Ace A.C. Arc Welders

Ace welders manufactured by Pier Equipment Mfg. Co., Benton Harbor, Mich., incorporate a specially designed transformer with reactance and employ a circuit that provides a stable, non-blasting arc, without spatter loss. They may be used for fillet, horizontal, vertical or overhead welding of from 22-gage sheet metal to heavy castings. They are especially valuable in construction as well as repairing of trucks, trailers, and other



automotive equipment. They can be used with any good A.C. rod, the cost of which is comparable to coated D.C. rod.

Huffman Equipment

Huffman Mfg. Co., Dayton, Ohio, has a new combination gear flusher and engine cleaner, and a new bulk alcohol dispenser. The gear flusher has been designed for cleaning hypoid gears, and ordinary gears. It is equally efficient as an engine cleaner.

Offered in two models—Nos. 312 and 313. The latter has a hook for suspending the flusher from the rear axle housing. Available at \$6.75 for No. 312, and \$6.95 for No. 313.

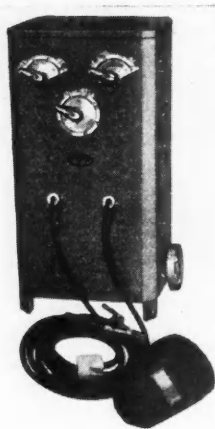
The bulk alcohol dispenser incorporates the features of a cock valve faucet and push button valve type faucet. This dispenser can be used for dispensing bulk alcohol, naphtha, gasoline, kerosene, etc.

Electric Drill

The Millers Falls Co., Greenfield, Mass., has just introduced a new 1/4-in. production drill known as Dynamite. It weighs 2 1/2 lb. and has an overall length of 8 in. and a body width of 2 1/2 in. The die cast aluminum shell houses a motor with ball bearing armature running in a horseshoe field. Unobstructed air-flow over vital units insures cool running.

Miller Portable Welder

An A.C. Welder with separate voltage and amperage controls, enabling the operator to select the most desirable voltage for



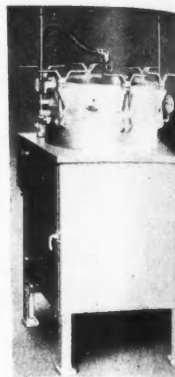
the amperage used on any job, has just been put on the market by Miller Electric Mfg. Co., Appleton, Wis. The three dials on the front of the cabinet are plainly marked. Built in 3 sizes with a current range from 10 amperes to maximum output, this welder is heavily constructed for hard usage. Equipped with wheels and a handle. Furnished standard for 220 volts, list prices range from \$210, to \$315.

Hinsdale Socket Wrenches

The Hinsdale Mfg. Co., Chicago, Ill., has a set of three socket wrenches which provide openings to make them a universal set. These heavy-duty wrenches are hot forged to finish size and they are chamfered to slip over any nut with a full tight grip. The walls are thin giving unusual clearance yet the chrome vanadium used makes them unbreakable. They are 15 in. long and the set sells for \$13.30.

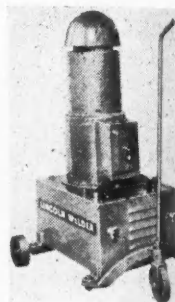
Hilliard Reclaimers

The Hilliard Corp., of Elmira, N. Y., announces its new line of re-designed Hilco Reclaimers. These are now made in three standard sizes—Model C, having a capacity of 12 gal. per day; Model G, 25 gal., and Model H, 50 gal. Larger units are made up special on order. The only labor required per day is 15 min. for the Models C and G, and 30 min. for the H—this being the time to replenish the filtering material known as Hilite, a highly effective filtering agent.



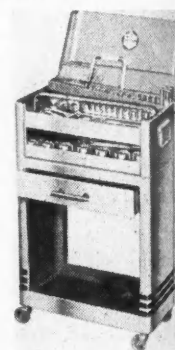
Lincoln Arc Welder

A new small motor-generator type of arc welder which brings the many advantages of arc welding to garage and fleet shops, has been announced by The Lincoln Electric Co., Cleveland. Especially designed for welding thin sheets, plates and shapes, this new welder, known as the SA-150, can be supplied for use on any power line, including 110-volt circuits. It requires but little more than 2 sq. ft. of floor space.



Blackhawk Tool Chests

The Blackhawk Mfg. Co., Milwaukee, Wisc., has a 80RRS set of tools which comes with a tool chest and portable stand which serves as a work bench. The tools include complete sets of sockets, box wrenches and end wrenches. The tool chest is removable from the portable stand by merely picking it up. The unit complete lists at \$163. This set is called Treasure Island. Another set of tools complete with cabinet is the Red Rover which comes in four assortments ranging in price from \$148 to \$201. In these latter sets the tools are stored in drawers of the portable cabinet and there is no detachable chest.

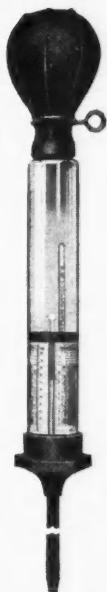


Bonney Bulb Plier

Bonney Forge & Tool Works, Allentown, Pa., has recently added a new tool known as the No. B24 Headlight Bulb Plier.

Weatherhead Freezometer

THE Weatherhead Co., Cleveland, Ohio, have a new hydrometer known as the 136 Freezometer. All charts are self-contained and no reference sheets are used. It is calibrated for all anti-freezes. The tables are solution-proof and the thermometer is non-fading. The tip is 14 in. long so that it gets into deep radiators. The bulb holds 6 oz. and the heavy glass is annealed for added strength. A metal ring for hanging is included in the price, \$3.

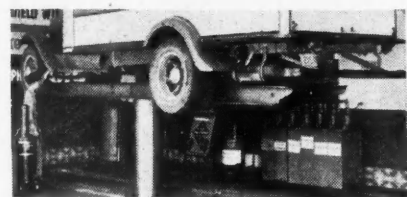


Hypressure Jenny

The new E series of chemical vapor spray cleaners made by the Homestead Valve Mfg. Co., Coraopolis, Pa., require only an ordinary lighting circuit outlet and 80 gal. per hour service water supply. Where units are mounted permanently an 8 in. minimum diameter flue is advisable. The E series have many features and have been improved in appearance.

Lift and Lift Muffler

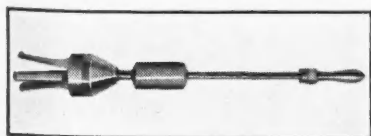
The single plunger air operated lift illustrated is composed of a 15 3/4 in. plunger and 8 in. H beams 22 ft. long. The beams are recessed 4 in. allowing passenger car loading. Other models are available in single and double plunger lifts. In addition the Rotary Lift Co., Memphis,



Tenn., has an air exhaust muffler which eliminates the noise of the air lift exhaust. It can be installed on old and new models. It is compact, measuring only 3 in. in diameter and 6 1/2 in. long. It weighs 2 lb.

Felt Combination Puller

Felt Products Mfg. Co., 1504-14 Carroll Ave., Chicago, has a new combination puller for axle shafts, bearing races and



all types of grease and felt retainers. Jaws are made of drop forged chrome molybdenum steel, and all other parts are carefully machined and heavily chrome plated.

OTC Sleeve Puller

Built to service over 100 makes and models of trucks and tractors using removable cylinder sleeves, the OTC Univer-

sal Sleeve Puller, made by Owatonna Tool Co., Owatonna, Minn., pulls cylinder sleeves regardless of the number or position of the cylinder head studs. Adjustable legs permit centering the tool easily. Hinged adaptor plates can be applied from the top without taking the tool apart.

Flexible Body Files

Rinck-McIlwaine, Inc., 16 Hudson St., N.Y.C. have a new body file with a new form of reamer tooth which cuts smoother and stays sharp longer. It is self cleaning and will not load up when used on painted or lacquered surfaces. This body file fits all 14 in. body file holders.

Jiffy Pressure Lubricator

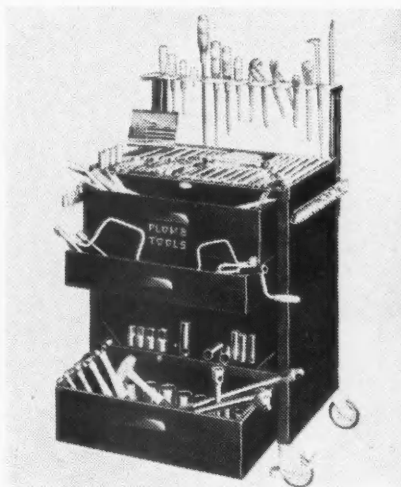
The Jiffy hydraulic lubricator made by the Jiffy Lubricator Co., Fargo, North Dakota, will produce from 1000 lb. to 10,000 lb. or more without the assistance of a booster unit. There is no installation expense and there is no hose outlet to



worry about as the unit is self-contained. It has three pressure shifts and weighs 7 lb. The price is \$21.50.

Plomb Tools

The Plomb Tool Co., Los Angeles, manufactures Toolmobile Master Sets, which is composed of a full set of hand tools and a portable cabinet in which the tools can be securely locked. The drawers and trays have been arranged so that the tools can be placed for working without loss of time and the mobile cabinet can be



used as a work bench. It is possible to mount a vise on the top. The set complete with cabinet sells for \$197.65.

Allen A.C. Arc Welders

The Allen Electric and Equipment Co., Kalamazoo, Mich., recently announced three new A.C. Arc Welders. The Model E-270 has thirty heat stages, with a range of from 15 to 250 amp. The E-271 has 24

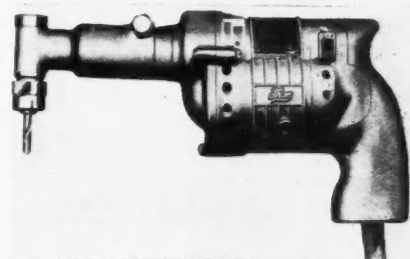


heat stages (15 to 175 amp.), and the E-272 has 18 heat stages (15 to 90 amp.).

An important feature is the low heat of 15 amp. available for body and fender welding, also the closer current control, in 4 amp. stages, so that the proper heat is available for every job. These units will last for years, and they can be used continuously without overheating, without vibration, and at a low upkeep, and operating cost.

Thor Right Angle Drill

Having a possible working clearance of only 2 3/8 in., the new THOR U14R 3/16 in. and 1/4 in. capacity right-angle portable electric drill, made by Independent Pneumatic Tool Co., Aurora, Ill., has an extremely small working clearance. The drill head on this new unit measures only 2 1/8 in. overall and the angle attachment can be turned and clamped into any position, making it possible to drill in places formerly inaccessible.



This drill weighs 3 lb. and is but 9 1/4 in. overall. The design permits perfect one-hand operation. Equipped with 1/16 in., to 3/16 in. collets for twist drills, it offers a wide drilling range. Spindle offset is 13/32 in. The U14R operates at 2700 r.p.m.

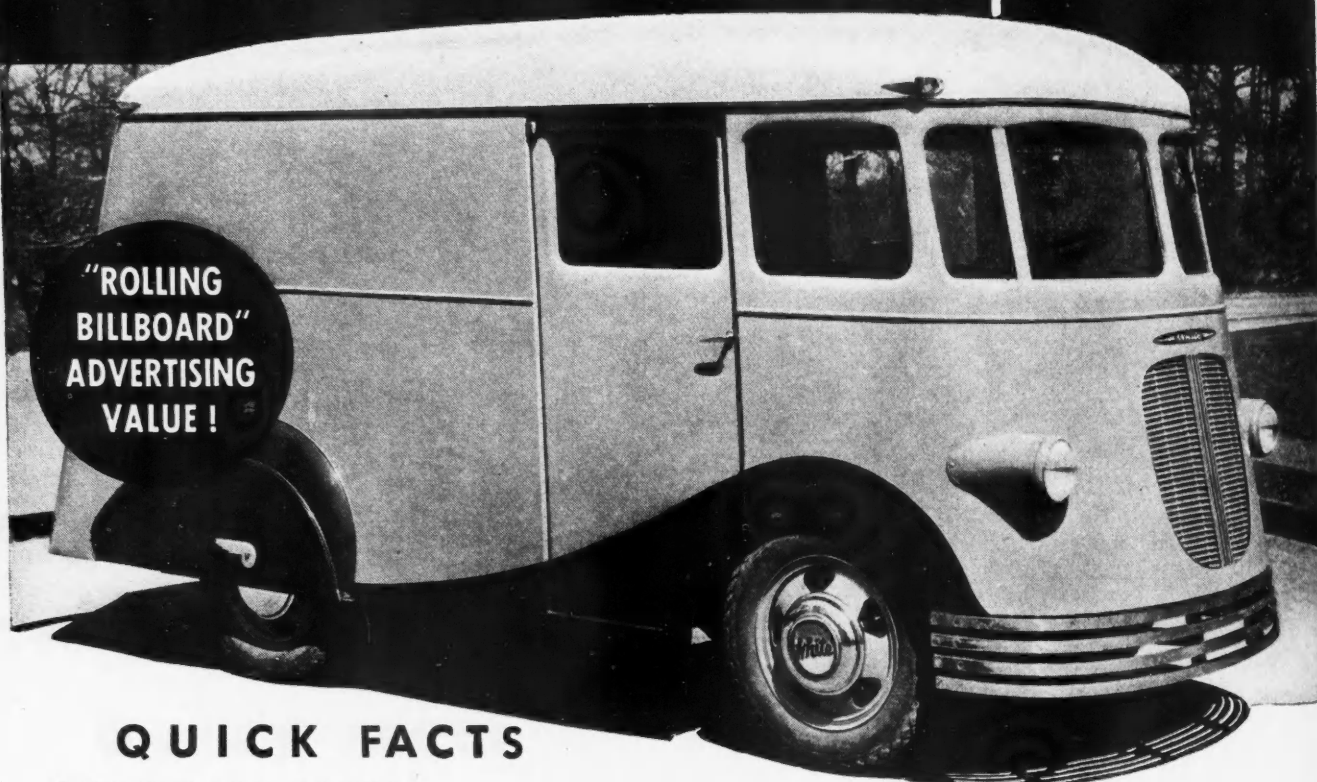
Storm Tension Wrench

The Storm Mfg. Co., Inc., Minneapolis, Minn., has a new tension indicating wrench for use in tightening cylinder head bolts. The dial shows the tension on each bolt as it is tightened so that it is possible to avoid distortion by uneven tightening.



The NEW WHITE

combines **ALL** the best features



QUICK FACTS

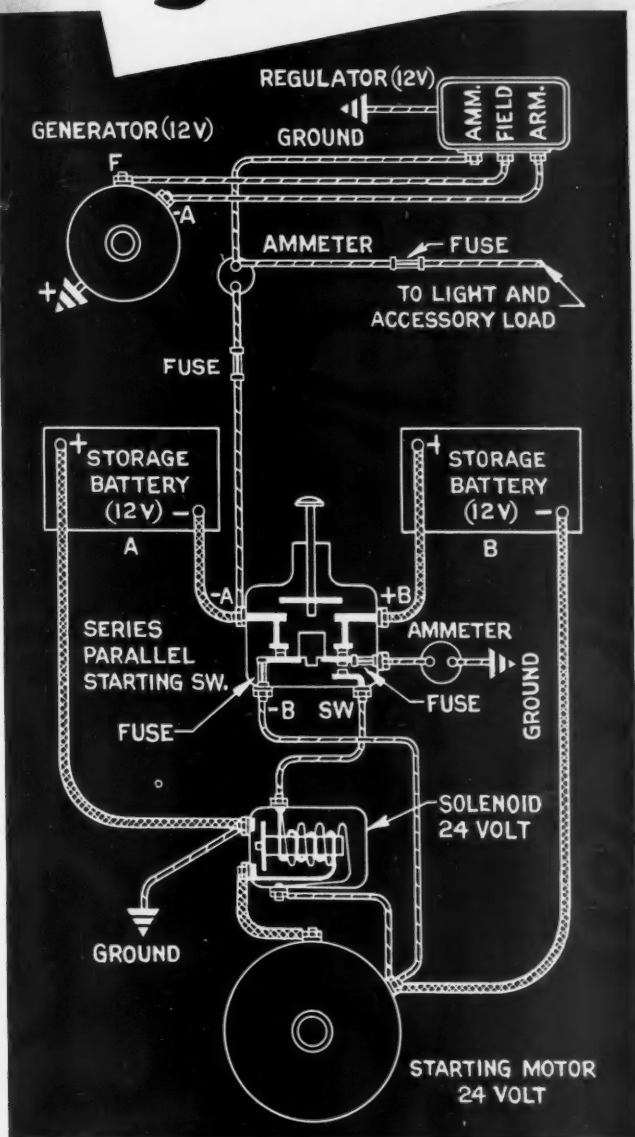
- 1 REMARKABLE FUEL ECONOMY.** Actual tests show an average non-stop mileage of 18 to 19 miles per gallon. Idles 3 hours, 10 minutes on one gallon.
- 2 MAXIMUM PAYLOAD SPACE.** With an overall length of only 17 feet (102-inch wheelbase) 350 cubic feet of loading space are provided.
- 3 EXCEPTIONAL MANEUVERABILITY.** The short overall length, combined with a wide tread—63-inch—front axle, yields an extremely short turning radius and all-around maneuverability in traffic.
- 4 OVERSIZE BRAKES, TRANSMISSION, CLUTCH.** Four-wheel genuine hydraulic brakes, 264 square inches. Sturdy 11-inch clutch. Heat treated, case hardened transmission gears.
- 5 ENGINE ACCESSIBILITY.** The engine is located under a perfectly flat floor, easily accessible through a large, conveniently placed trap door.
- 6 LOW ENGINE SPEED.** With a 5.14 rear axle ratio, a road speed of 40 M. P. H. is obtained from an engine speed of only 2100 R. P. M.
- 7 50-50 LOAD DISTRIBUTION.** Perfect weight balance assures a smooth ride for perishable goods; promotes ease of handling and assures long tire life.
- 8 LOW CUT-IN GENERATOR.** At an engine speed of only 200 R. P. M.—well within the idling range—the generator begins charging the battery.
- 9 DRIVER VISIBILITY.** Because the driver is seated at the extreme front of the Merchandor, he has a clear, unobstructed view in all directions.
- 10 LOW FLOOR AND STEP HEIGHT.** The level floor is just 30 inches off the ground. Two steps—18 inches and 12 inches—make getting in and out easy and convenient. The first step is practically at curb level.
- 11 ENGINE FEATURES.** 205 cubic inch displacement. Tocco hardened crankshaft. Cadmium Nickel main and connecting rod bearings.
- 12 LESS GARAGE SPACE NEEDED.** The extremely compact design and ease with which it can be maneuvered reduces by approximately one-half the garage space necessary for conventional trucks.

★ ★ ★ **THE NEW White**

When writing to advertisers please mention Commercial Car Journal

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

A NEW DELCO-REMY Series-Parallel STARTING SWITCH



Delco-Remy now offers the Model 407-H Series-Parallel Starting Switch for 24-volt starting with 12-volt generating equipment. Splash-proofed, and rugged in construction, it will give dependable service in Diesel engine applications—or may be used in connection with any installation requiring increased torque for starting.

In the normal circuit, two 12-volt batteries are connected in parallel for a 12-volt current supply. When the switch is operated for starting, the parallel connections are broken and the batteries are connected in series—giving a 24-volt source of power for starting. Lights and other connections are not disturbed during the starting cycle. An ammeter in the "B" battery circuit indicates the charge to the "B" battery. Fuses, which are an integral part of the switch, are readily accessible from the outside.

A remotely controlled solenoid-type switch is also available for push-button operation.



Delco-Remy parts and service are available at Authorized Electrical Service Stations of United Motors Service in all important cities.

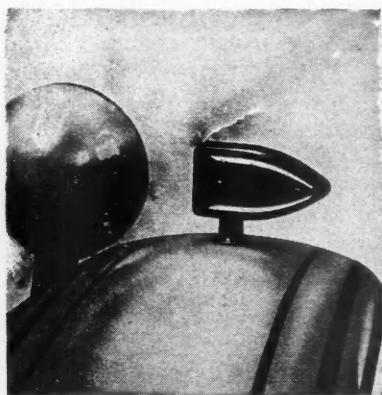
Delco-Remy

ANDERSON, INDIANA

World's Largest Manufacturer of Automotive Electrical Equipment

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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Mounted on fender to warn passing vehicles of turn

**Longest Life
Most for the Dollar**

Check
**TURN SIGNAL
Values**

- ✓ **CUT-OFF
REINDER**
- ✓ **RUST-RESISTING
METAL**
(Baked Enamel Finish)
- ✓ **WELDED
REINFORCEMENTS**
(No Rivets to Work Loose)
- ✓ **DEPENDABLE
SWITCH**
- TURN SIGNALS
Will Stand Up and
Take It!**

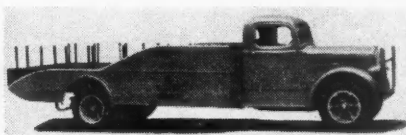
Let us tell you more about them
Watch for this trademark

TURN SIGNAL
CORPORATION

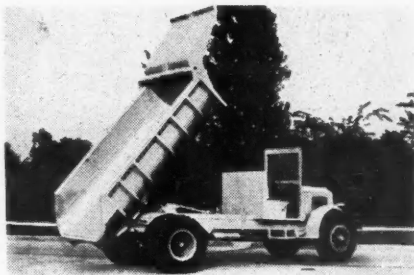
18 West Cheltenham Ave.
(Germantown) Phila., Pa.

BODIES

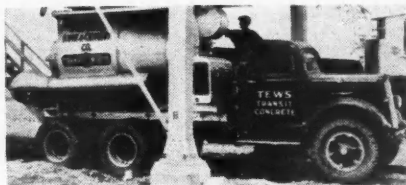
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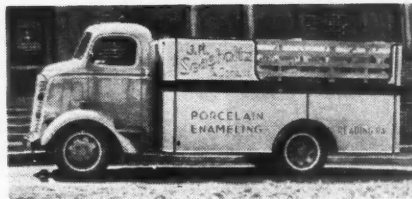
An all steel body for hauling steel by the Truck Engineering Co., Cleveland. The front support rack makes it possible to haul long length structural steel members with ease



A 6 cu.-yd. body with straight steel sides of 1/4 in. steel by Heil. The body dimensions are 10 ft. long and 6 ft. 8 in. maximum width. A No. 5 twin cylinder hoist does the lifting



A cement mixing body with full equipment including its own power plant mounted on a White model 918 chassis. A between job of mixing done in transit without loss of time



This body is finished in a bright orange porcelain enamel at a cost comparable with an ordinary paint finish. The work was done by Porcelain Enamel and Mfg. Co., Baltimore

(TURN TO PAGE 183, PLEASE)

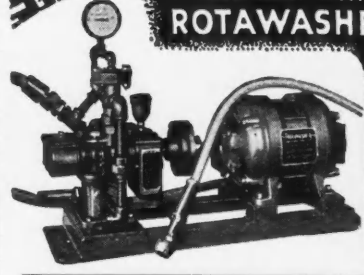
This New Streamline **SPEED WASHING**

increases profits! Cuts cost!

If you're washing cars for profit—Speed washing is the better, quicker cleaning that builds bigger profits. Users report greatly increased patronage, and better work in less time. If you're operating a fleet of trucks or busses—Speed washing is the way America's biggest operators keep their fleet at a big saving.

... but remember—

SPEED WASHING
IS HAD ONLY WITH
ROTAWASHER

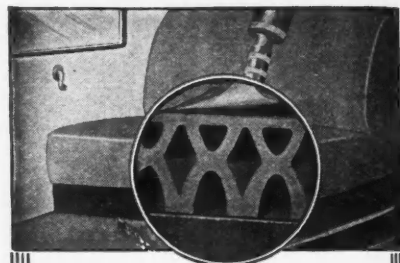


CLEANS
CARS
BUSES
TRUCKS
FASTER
BETTER
Save
for
details

THE ROTAWASHER CORP.
122 E. St. Clair Ave., Cleveland, Ohio

A SEAT CUSHION

YOU NEED NEVER REPLACE



Whatever your seating problems may be, Black Diamond seat cushions and back rests offer the most durable and economical answer. Made of resilient semi-sponge rubber and incorporating the exclusive patented Diamond Grid construction, they'll eliminate all upkeep expense and give endless miles of improved riding comfort. In sizes and shapes to fit any type vehicle. Consult us about your seating problems and let us give you the facts which will save you money.

KARPEX MANUFACTURING CO.
1424 E. 19th St., Indianapolis, Ind.

MASTER-LIGHTS TYPE "T" for Trucks

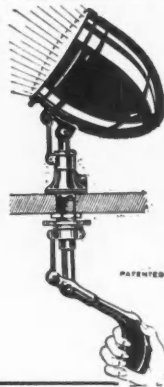
"Just Point the Pistol Handle"

**MOUNT ON CAB ROOF—WHERE LIGHTS SHOULD BE
MOST POWERFUL AND RUGGED SPOTLIGHTS MADE**

The World's Only Spotlight Exclusively for Trucks
AND IT IS THE FINEST FOG LIGHT EVER MADE

SOLD DIRECT TO LARGE USERS ONLY

Est. 1914 **CARPENTER MFG. CO.** Cambridge, Mass.



NEW ALCO 4-WHEEL DRIVE

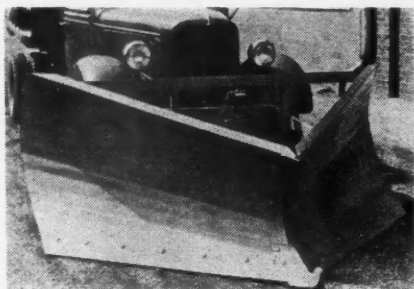
For Ford and Chevrolet trucks offers revolutionary performance features never before found—a light, fast all-wheel-drive that piles up profits for the hauler on hard runs.

For Information Write or Wire

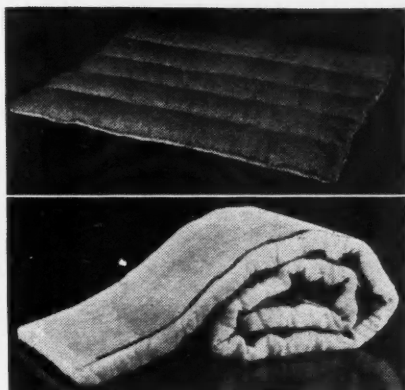
ALMA MOTOR COMPANY
884 Penobscot Bldg.
DETROIT, MICH.

BODIES

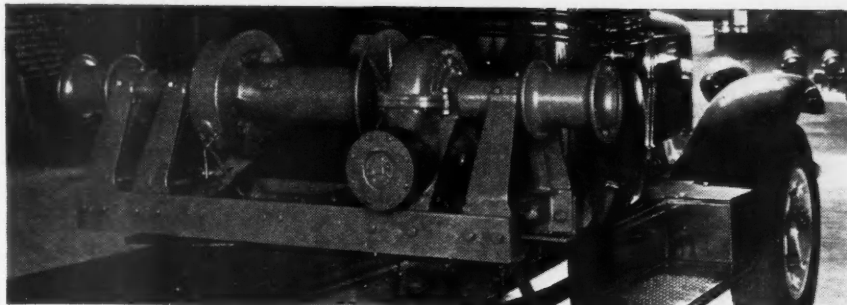
(CONTINUED FROM PAGE 182)



This hydraulically controlled Anthony snow plow rolls the snow from cutting edge to side of road. It trips upon obstruction and automatically returns to plowing position



Dry Zero Insulation is composed of tubular fibres from pods of a tropical tree. By graining these fibres they are semi-felted into a permanent heat resisting batt shown.



This Tulsa winch is representative of a complete line of winches made by the Tulsa Winch Mfg. Corp. Power take-off driven, the drum clutch and brake levers are in the cab

(TURN TO PAGE 184, PLEASE)

25,000 SATISFIED TRUCK OWNERS CAN'T BE WRONG

from
COAST to COAST
WARSHAWSKY & Co. supplies thousands of truck owners with first class equipment...

"Everything from a Cotter Pin to a Complete Motor"

MOTORS, CARRIERS, TRANSMISSIONS, GENERATORS, MAGNETOS, AXLES & WHEELS FOR ALL TRUCKS

In an Emergency, You Can Count on Warshawsky for Immediate Service

SEND FOR COMPLETE 92 - PAGE CATALOG, FULL OF NEW AND RECONDITIONED PARTS

You'll Always Buy for Less at

THE ORIGINAL WARSHAWSKY and Company, Inc.
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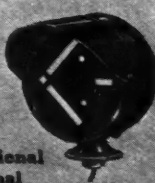
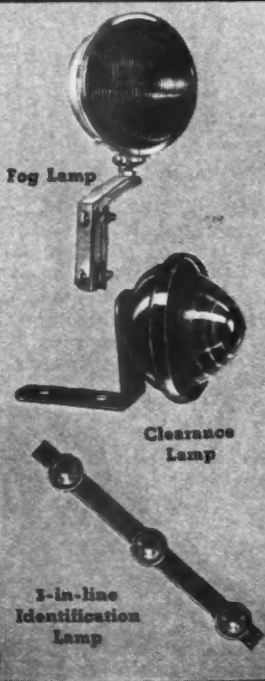
Yankee LIGHTING
IS Safe
LIGHTING*

I NSTALL Yankee lighting equipment in your trucks and know that your truck lighting problem is solved safely, efficiently, economically. For Yankee has been manufacturing automobile lighting devices for over 23 years, and backs these products with its guarantee against mechanical defects.

*Yankee manufactures all items of lighting equipment required by the I. C. C.

YANKEE METAL PRODUCTS CORP.
NORWALK, CONN., U. S. A.

Write for illustrated catalog "E" describing other Yankee truck lighting equipment.





QUICK, PROFITABLE BEARING ADJUSTMENTS

Simply peel the precision laminations . . . one or more at a time. Accurate adjustments right at the job! No filing. A smooth-as-glass surface—always. Standard for all makes of engines. (Also with patented soft babbitt tips for pressure-lubricated systems.) **PEEL 'EM FOR PROFIT.**



LAMINATED SHIM COMPANY, INC.
MFRS. . . . LONG ISLAND CITY, N. Y.
Replacement Sales by
FEDERAL-MOGUL CORP.
DETROIT 787

Specify MILEY Brake Lining

Nine types that not only assure the correct friction but the correct structure and best braking material for each brake.

BLACK GOLD

MILEY BLACK GOLD is the only metal base lining. Dense as cast iron. it is the best for Bendix, Lock heed, Steeldraulic, and Huck brakes—for all "depression year" mechanisms and others that compensate for lack of drum area with extreme operating pressure.

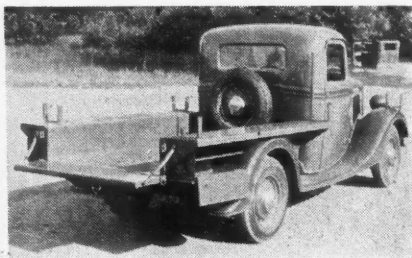
MILEY EBONITE Heavy Duty, a new zinc wire, synthetic resin, semi-moulded, that comes in rolls, sets, and on Miley Ready Lined Brake Shoes. Strictly heavy duty lining—that gives 2 wheel brakes 4 wheel power and steps up 4 wheel brakes to power-brake performance. The best lining for Fords, Heavy Trucks and External Brakes.

Write for
Samples and
Data Book

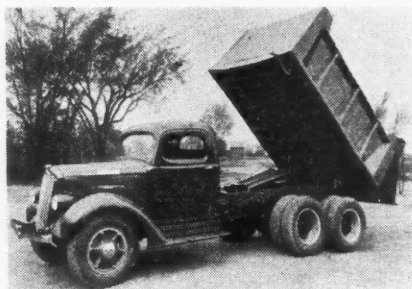
L. J. MILEY CO., Inc.
1470 S. Michigan Ave.
CHICAGO, U. S. A.

BODIES

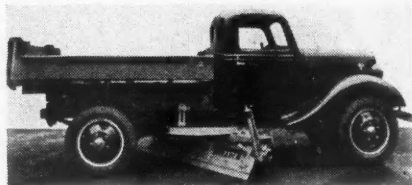
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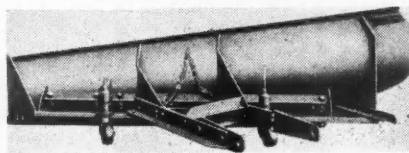
All steel, 10 gage, electric welded utility and quick repair service body by Anthony. Made in any length with 13 in. heavily braced work benches and 26 x 10 x 10 in. tool boxes



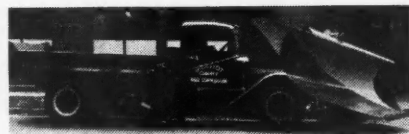
An Anthony model D-6 heavy duty hoist and body in the elevated position. This hoist and body are capable of handling 6 1/2-8 cu. yd. weighing 15 tons. Chassis: White. Axle: Grico



The Monarch Scraper can be used at speeds from 8-15 m.p.h. on gravel roads. It is hydraulically controlled and the blade raises to 8 in. maximum road clearance



This Baker snow plow designed for use on 1 1/2-ton trucks is equipped with casters and trip blades so that it can be used right down to the surface on rough pavement work



The new Root Model 60 Vee plow is equipped with hydraulically controlled deflector plates. Plates can be put into fast plowing position and plow raised by three strokes of pump

(TURN TO PAGE 185, PLEASE)

AMERICAN Safety Fusees NOW Stand Anywhere



PAT. #2090911

On the shoulder of a road, no matter how uneven, or on any pavement, your driver can set up one of the new American Fusees. The spike has been replaced by an integral folding tripod. Spread the wire legs and light up. Instant protection without hunting a "soft spot."

Also manufacture Fusees with spike end.

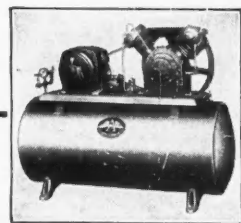
Burning times 10-15-20-30 minutes.

A bracket holding three Fusees in clips in the cab makes protection instantly reachable. Get one for each cab.

Write for circular and price sheet.

PAT. #2090911
Folded

The American Railway Signal Co.
Fostoria, Ohio



AIR COMPRESSORS—for 52 years

Because of DAYTON'S 52-year record of building Air Compressors exclusively you get many benefits—in price and performance—obtainable nowhere else. Let us tell you about them.

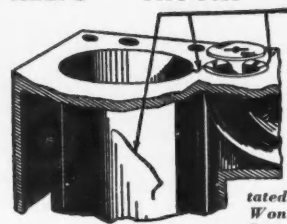
THE DAYTON AIR COMPRESSOR CO., Dayton, O.

A ROLL-ABOUT Groover Solves Re-Grooving Problems

Here's the way to safe, easy, and inexpensive re-grooving. Just push a Roll-About under each wheel and, without electric current, put a 1937 anti-skid tread on a 1936 tire in 5 minutes. A Roll-About requires no skill, cuts fast and clean with minimum loss of rubber. And your tires are safe and within safety regulations! At your jobber's, or write.

SAFE TOOL MFG. CO.
Dept. 100 Bridgeport, Pa.

WONDER WELD KEEPS TRUCKS ENROUTE



No 30-hour lay-overs on this 30-minute job. Beware of imitations. Like all good products Wonder Weld is being imitated. Use genuine Wonder Weld For Guaranteed Results.

MILLER MFG. CO.
1220 KAIGHN AVE., CAMDEN, N. J.

Sterling

DIESEL

MOTOR TRUCKS

PERFORMANCE

Sterling Diesel and gasoline motor trucks have long proven their superiority of performance in the heavy duty motor truck field. These sturdy, quality-built motor trucks haul greater loads faster, more economically and at a lower maintenance cost. You can depend on Sterlings—there's no job too tough for them!

STERLING MOTORS CORPORATION
MILWAUKEE, WISCONSIN

"Supervised Transportation"



1st

and the last word in governors

Write for complete information — there is a MONARCH distributor in your area.

MONARCH GOVERNOR CO., DETROIT

TELL THE WORLD YOU'RE DRIVING SAFELY!

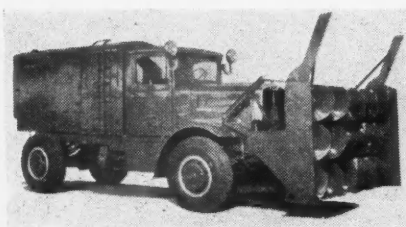
HOW?
Every one wants to know!

Learn the answer by writing to Pierce Governor Company, 138 Ohio Avenue, Anderson, Indiana, for complete information about . . .

PIERCE PIERCE ZONE CONTROL

BODIES

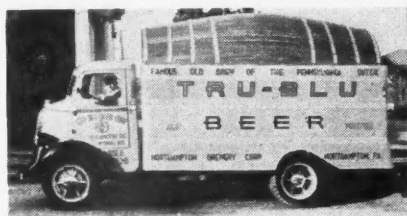
(CONTINUED FROM PAGE 184)



The Snogo plow mounted on the front of the Oshkosh model F-36 truck is made by the Klauer Mfg. Co. This combination is being used by the California Highway Dept.



New Pfaudler frameless tank trailer which comes in several models. The only manhole is located in the rear head where it is protected by the beaver tail. Fully insulated



Using trucks for sales promotion in addition to their regular work is nothing new but this Studebaker camelback with the barrel body is one of the really better examples of it



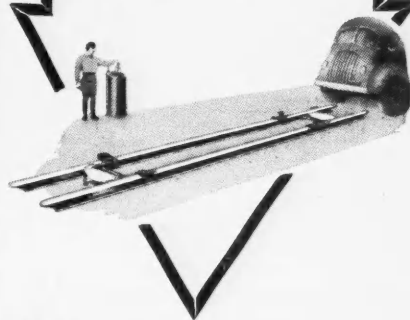
The City of Minneapolis has purchased a fleet of Diamond-T trucks equipped with Heil bodies and hoists for garbage collection. They have a net capacity of 8 and 9 cu. yd. (TURN TO PAGE 186, PLEASE)

YOU CAN SPEED UP SERVICE AND CUT OPERATING COSTS

With a

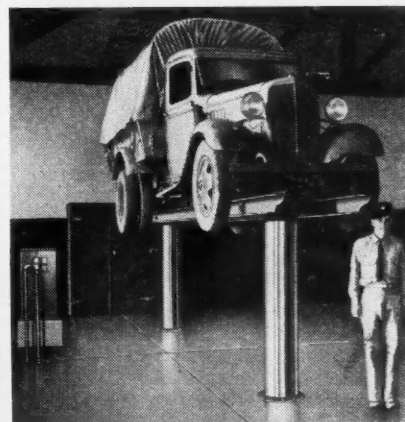
Rotary BUS AND TRUCK

LIFT



WIDER spaced beams. No "in-the-way" cross members. More visibility. More accessibility. Faster, more accurate service. A saving in time that means a saving in dollars on greasing, oil changing, and all under-car maintenance and repair work.

Rotary Bus and Truck Lifts are available in 12 Standard Models, with capacities from 10,000 lbs. to 50,000 lbs. Special equipment can be made to meet your special requirements. Invest a little more and be able to service both passenger cars and trucks on the same lift. Write for FREE Catalog and Literature.



Jobbers in All Principal Cities

ROTARY LIFT CO.
MEMPHIS, TENNESSEE

KINNEAR STEEL ROLLING DOORS

For Trucks and Buildings

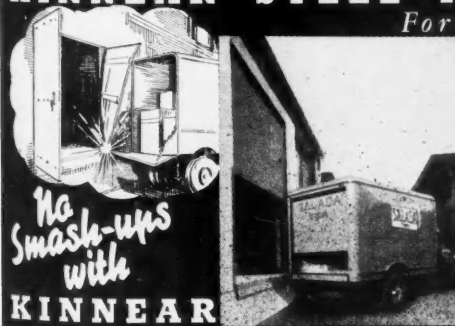
ALL METAL

Interlocking slats coil like a window shade, out of the way quickly and easily.

- ★ CONVENIENT
- ★ FIRE PROOF
- ★ BURGLAR PROOF
- ★ MORE DURABLE

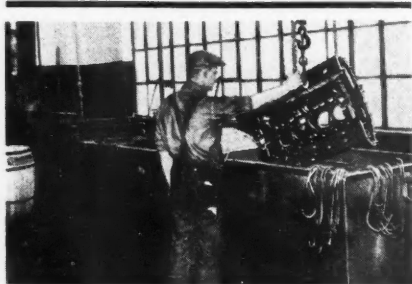
Write for Details

The **KINNEAR Mfg. Co.**
2100-20 Fields Ave., Columbus, O.



COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

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For COLD Tank Cleaning!

MAGNUSOL eliminates the use of heat in your tank cleaning of dirty motor blocks and heavy dismantled parts. As it requires no heating, your MAGNUSOL solution is always ready. Parts are cleaned more quickly, surely and safely.

MAGNUSOL is economical for it leaves no sludge in the tank and the solution can be used over and over again.

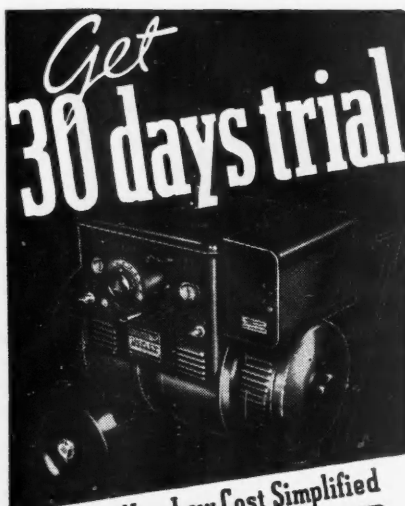
For more information, write today for your copy of our New MAGNUSOL Folder.

MAGNUS CHEMICAL COMPANY

38 South Avenue, Garwood, N. J.



MAGNUS CLEANERS



...of this New Low Cost Simplified HOBART ARC WELDER

Try it on your own job. Learn all its many outstanding features found in no other welder and you'll understand why Hobart Simplified Arc Welder is the fastest selling arc welder on the market today. Hobart Brothers, Box CJ-117, Troy, O.



Free!

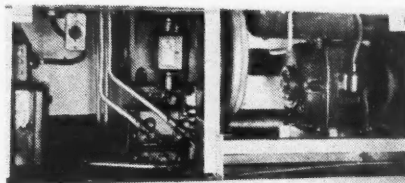
The Hobart Catalog which explains in detail all of its outstanding features. Ask for it today on your letterhead. No obligation.

BODIES

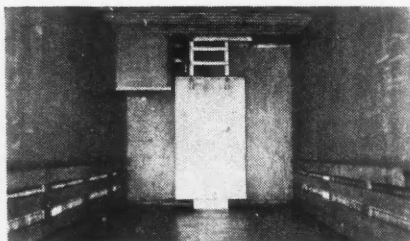
(CONTINUED FROM PAGE 185)



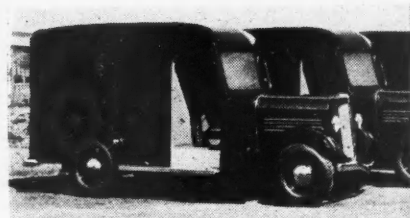
This Fitzgibbon and Crisp bottlers body is equipped with the new Kinnear Rolling Truck door. These doors operate exactly the same as a garage door with which you are familiar



This is a view forward, into the machinery compartment of a truck equipped with a General Electric refrigerator unit. General Electric also builds the bodies in a full range of sizes



Interior view of a refrigerated truck. The refrigeration system is made complete by Timpte Brothers and it can be shipped as a unit for installation by a body builder



These Stewart trucks with bodies by Stewart were built for United Parcel Service for department store delivery. They have a rear step-in well with 17-in. loading height
(TURN TO PAGE 187, PLEASE)

WESCO

Chains ... a complete line

Wesco chains are rugged and dependable ... a long-wearing line of case-hardened, heat treated chains for cars, trucks and buses ... on and off in a jiffy with the patented Wesco lock. Here is a line that will pay any fleet owner dividends and give complete satisfaction.

Write for circulars TODAY

WESTERN CHAIN PRODUCTS CO.
1815 Belmont Ave., Chicago, U. S. A.



IT PAYS TO BUY

EDWARDS QUALITY SEMI-TRAILERS

EDWARDS IRON WORKS, INC.
SOUTH BEND, INDIANA

THUMB-SCREW ADJUSTMENT
BALANCED (2-SIDE) PULL
OVER LAPPING SEAL

TRADE MARK

NOC-OUT

HOSE CLAMPS

THE HOSE CLAMP WITH THE THUMB SCREW

Standard equipment of the automotive industry. Adjustable—one size equals many. Quick tightening, perfect seal. Makes radiators and heaters "Anti-Freeze" tight. Stock up now and be ready for the first cold snap. AT ALL JOBBERS.

WITTEK MFG. CO.
4305 W. 24th Pl., Chicago, U.S.A.

CARRY THE EXTRA LOAD SAFELY WITH

FORD • CHEVROLET
DODGE • PLYMOUTH
INTERNATIONAL • GMC
REO • MACK

Genuine

Maremont Helper Springs

BUICK • PONTIAC • OLDSMOBILE
HUDSON • TERRAPLANE
LA SALLE • CHRYSLER
PACKARD • ETC.

• • FOR PRACTICALLY EVERY PASSENGER CAR, PANEL DELIVERY AND TRUCK • •

Play Safe with Maremont Alloy Steel Springs—Made to exact car maker's specifications

MAREMONT AUTOMOTIVE PRODUCTS INC. (Dept. C.C.J.) Chicago, Ill.

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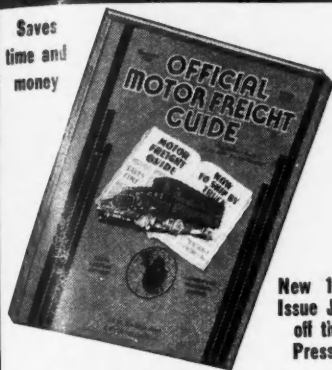
McCORD REFRIGERATION
—FUEL SYSTEM
FOR TRUCKS
REFRIGERATION
AT NO COST
—BY THE FUEL
THAT RUNS THE MOTOR

McCORD RADIATOR AND MFG. CO.
DETROIT

COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

Ship By Truck?

Saves
time and
money



New 12th
Issue Just
off the
Press!

The only **NATIONAL GUIDE** of the
Motor Freight Industry

An essential to successful shipping by truck
Lists thousands of reliable truck lines
... Gives full details on important
carriers ... Shows which lines serve
each town ... Contains **ROUTE
MAPS AND TIME SCHEDULES** of
many operators ... Free Legal
Supplement of State and Federal
Motor Carrier Laws with annual sub-
scription. Single copy \$3.00. Yearly
subscription \$7.50.

Write today for free booklet "WHY
SHIP BY TRUCK?" with full details.

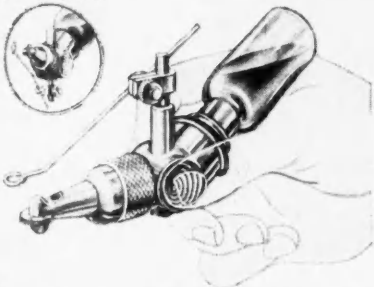
OFFICIAL MOTOR FREIGHT GUIDE
740 W. Van Buren St., Chicago, Ill.

MODERN PAINT SHOPS NEED



Efficient—economical—readily adjusted—
uses modern materials—makes clean, sharp
stripe—bottle fed—cleans easily.

Eight stripe widths, 1/64 to 3/16 inches.
Gravity and force feed types. A tool for
every size shop. Prices, \$1.50, \$2.50, \$4.50,
\$5.50 & \$8.50.



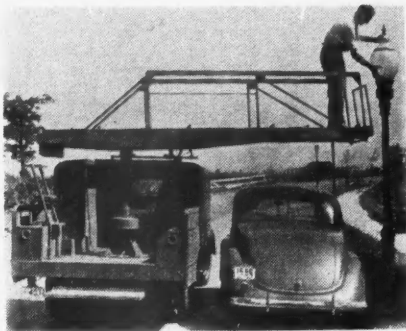
Order from your jobber or write us for
complete details.

WENDELL MFG. CO.

2533 N. Ashland Ave. CHICAGO, ILL.

BODIES

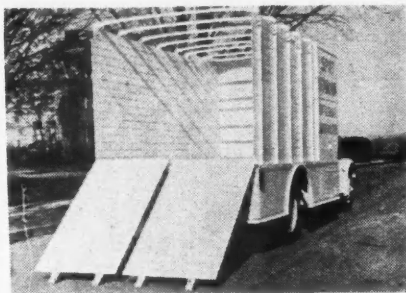
(CONTINUED FROM PAGE 186)



The ladder on this Baker Raulang body will
reach a light 31 ft. high. Catwalk and hand
rails make it possible to reach a light 14 ft.
from 1-ton truck and 8 ft. from 1/2-ton truck



A really heavy duty Gar Wood dump unit
for handling large rocks. It is equipped with
dual telescopic hoists for side dumping.
Note the heavy armor weight hood and grille



Cattle body by Brockway mounted on a 176-
in. model 88 Brockway chassis. The body is
14 ft. long, 96 in. wide and 6 ft. 6 in. high
above the floor. Locker boxes in each side
skirt

(TURN TO PAGE 188, PLEASE)



U. S. Pat. No. 1,990,657

OILDEX

K & S OIL DILUTION EXTRACTOR

—Provides these important ad-
vantages—

Increased Gasoline Mileage
Continuous Overhead Lubrication
Improved Crankcase Ventilation
Removes Water from Crankcase
Reduces Oil Acidity
Maintains Oil Viscosity
Bettors Piston and Ring Seal
Eliminates Sticky Valves
Restricts Sludge Formations
Improves Cold Weather Starting
Prevents Excessive Crankcase Dilution

OILDEX is proving highly satisfactory to
thousands — OILDEX will prove satis-
factory to you.

—Oil Dilution is *NOT* corrected by oil
filtration—



OUTLET
Pat. Pending

FILTREX

K & S SERIES OIL FILTER

—A Series of Three Distinct
Filtering Mediums—

—OIL kept **CLEAN, CLEAR,
PURE**—

OILDEX and FILTREX properly serviced
will reduce your oil bills at least 50%

For complete details write to

**K & S MOTOR PRODUCTS,
INC.**

18 HILLSIDE AVE., HILLSIDE, N. J.

Unconditionally
Guaranteed

MUFFLERS
TAIL PIPES
AXLES • GEARS
CYLINDER HEADS
CLUTCH PLATES

UNIVERSAL
ADJUSTABLE - FIT
MUFFLERS

U. S. PATENT No. 1,974,813. CANADIAN PATENT No. 348,899
LEAK-PROOF
BLOWOUT-PROOF

UNIVERSAL PARTS, INC. CHICAGO

WHEN IDLENESS
ROBS YOUR PURSE

There's Reason to
KICK!

THE HERCULES RECORD- MASTER

There's reason to kick when the thief of **IDLE TIME** robs you of profits that should rightfully be yours. The **RECORD-MASTER** stops this loss and gives you hundreds of extra miles each month at no cost. The recording chart (under lock) records each minute of stop and movement during the day. Here are three of the reasons:

1. **RECORD-MASTER** reduces needless overtime by automatically recording all movement and stop of your trucks during the day.
2. Prevents speeding to make up lost time, thus reducing the accident hazard.
3. **RECORD-MASTER** shows up idle time so you can deal with it. It is so simple and inexpensive that it will save you hundreds of dollars a year.

WRITE FOR FOLDER

An illustrated folder giving complete details is yours for the asking. Also, ask for folder on the **STOP-MASTER** that prevents excessive motor idling.

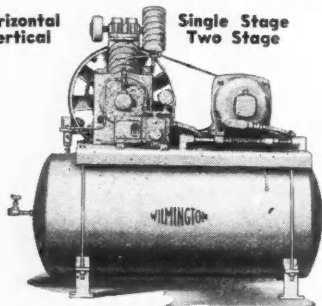
HERCULES AUTOMOTIVE SALES CORP.

400 Thorpe Building Minneapolis, Minn.
A few territories open for reliable distributors

WILMINGTON COMPRESSORS

Since 1903

Horizontal Vertical Single Stage Two Stage



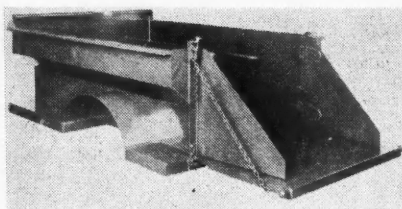
for DEPENDABLE Service

You have a supply of practically free air at all times—and at a ridiculously low maintenance cost—when you have a Wilmington Compressor. Our 34 years of continuous service to the automotive industry bring you these features in every Wilmington Compressor: a long-lasting nonpulsating check valve, an unloader which protects the motor from starting overloads, Timken Bearings. Send for a catalog today.

THE AUTO COMPRESSOR CO.
S. Mulberry St., Wilmington, Ohio

BODIES

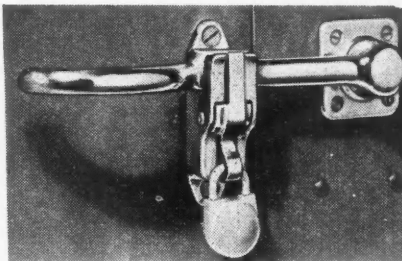
(CONTINUED FROM PAGE 187)



Body by Burch of Crestline, Ohio. It is designed for coal delivery and has a capacity of 75 cu. ft. It is made of 10 gage electrically-welded steel. Chute type gate is available



This Gar Wood bottlers body has three decks three cases wide, giving a capacity of 96 cases. It has special longitudinal reinforcing under decks. Mounted on a Chevrolet chassis



The inside mechanism of the new Eberhard "Frostate" lock is the same as the "Quick Lock" but the handle locking device is new especially adaptable to part time padlocking

MISCELLANEOUS

Peerless Repair Link

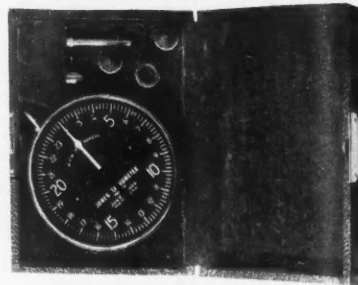
An addition to the complete line of Peerless tire chains is their new cross chain repair link. Made of case-hardened steel, the link slips easily into the cross



chain. Because of its extra long wearing surfaces it not only replaces the broken link, but actually gives added protection to adjoining sections. Peerless Chain Co., Winona, Minn., is the manufacturer.

New Rex-Hide Clip

JIFFYCLIP, a new friction-type fastener, is now standard equipment on all Rex-
(TURN TO PAGE 189, PLEASE)



ELIMINATE GUESSWORK

Adjust and check motor truck governors with a Jones Hand Tachometer. All readings are direct—R.P.M. are recorded instantly on the instrument dial. All adjustments are made with the truck standing still. The Jones Hand Tachometer makes periodical inspections fast and inexpensive, thereby keeping motors out of repair shops.

JONES MOTROLA
450 WHITLOCK AVENUE
NEW YORK CITY

TRUCKS CAN'T SKID when drivers use LINTERN SANDERS

Distributed by
BENDIX-WESTINGHOUSE
AIR BRAKE COMPANY
5001 Centre Ave.,
Pittsburgh, Pennsylvania

THE DEARBORN LINE CAB OVER ENGINE FOR FORD TRUCKS

ADDS A CAB-FUL OF PAYLOAD

The same wheelbase yields one-third to one-half more load capacity with no increase in operating cost. An easily-opened hood insures ready service accessibility. See your nearest Ford dealer or write us.

TRANSPORTATION ENGINEERS, INC.
10441 Shoemaker Ave., Detroit, Mich.

DOUBLE TIRE LIFE WITH DRAKE TIRE REGROOVERS

• Rugged Construction
• Price complete with stand—4 blades—6' rubber cord only
150 Watt Heating Head
Send at once for catalog **\$5.00**

DRAKE ELECTRIC
WORKS, INC.
3656 LINCOLN AVE. CHICAGO, ILL.

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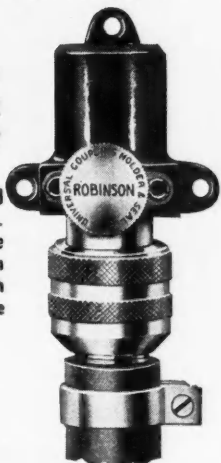
COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

THE ROBINSON UNIVERSAL COUPLING HOLDER

- HOLDS SECURELY
- SUPPORTS HOSE
- SEALS FROM DIRT

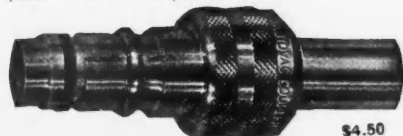
- Fits all standard type couplings. . . . Protects male coupling from damage which destroys brake efficiency.

\$1.25 LIST PRICE

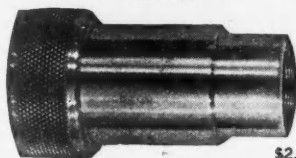


THE ROBINSON AUTOVAC COUPLER

Connected . . . Autovac is fully open! Disconnected . . . Autovac is tightly closed. No valve to turn off . . . nothing left to chance. Saves time and money. Autovac protects hose lines and mechanism from water and dirt . . . it's automatically sealed when not in use. Furnished in 3 sizes $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ inch. MALE \$4.50. FEMALE \$2.80.



\$4.50



\$2.80

**RELIABLE MACHINE SCREW
SALES CO., INC.**
NEWARK, NEW JERSEY

WEAVER Lo-Hi-Draulic JACKS

in sizes for every need

Ask for Catalog "O"
WEAVER MANUFACTURING CO.
SPRINGFIELD, ILL.



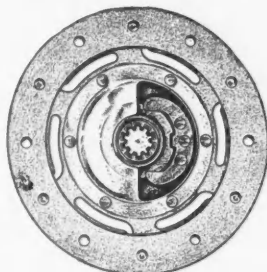
MISCELLANEOUS

(CONTINUED FROM PAGE 188)

Hide Windshield wiper blades, according to an announcement by Rex-Hide, Inc., East Brady, Pa. The clip is made of stainless steel and has the advantage of supplying a free hinge for the blade regardless of wiper arm type.

Soft-Cushioned Clutch

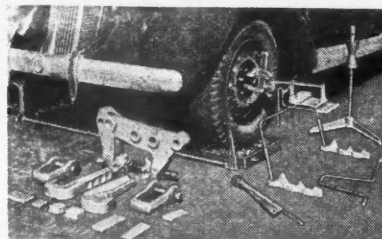
To meet the demand for a light-weight soft-cushioned clutch, Accurate Parts Mfg. Co., Chicago, recently introduced a new Z-type Powerflex clutch plate. The new plate is die cut and formed in the press with six uniform cushions presenting



parallel facing surfaces to flywheel and pressure plate. There are no coil springs and the floating hub is separated from disk to prevent transmission of vibration.

Manbee Front End Tester

Manbee Equipment Co. Inc., 44 N. Washtenaw Ave., Chicago, has a new brake tester and steering analyzer, including axle straightening equipment and a wheel balancing stand, that can be used



without the necessity of installing a drive-on rack. The portable feature of this equipment makes it particularly advantageous to shops where space is limited.

(TURN TO PAGE 190, PLEASE)

It's Common Sense

to give your drivers comfort, make their driving less fatiguing.

It's Dollars and Cents

to you, for the long life of SPONGEX Cushions repay you in big dividends.

Spongex Cushions

are made for new equipment or for replacement. Send us your next orders with proper dimensions.

Prompt shipment



Dept. C

**The SPONGE
RUBBER PRODUCTS CO.**
DERBY, CONN.

"PERFECT SEAL"

AS SPECIFIED BY
16 OF THE LEADING
CAR MANUFACTURERS

PROTECTS YOUR
HEAD GASKETS
AGAINST SEEPAGE
OF COOLING LIQUIDS

Ask Jobber or Write Factory
P.O.B. MFG. CO., Cincinnati, O.



Select Dependable Snow Plows For Your Trucks

The Baker line of 21 models, in "V," reversible blade and one-way types, offers a wide selection. All equipped with hydraulic lift and other new features which have made them leaders in thirty-six states.

Ask for 36 page Snow Plow Catalog.

THE BAKER MFG. CO., 571 Stanford Ave., SPRINGFIELD, ILL.

America's Oldest Maker of Snow Plows for Highways and Streets

BAKER SNOW PLOW

The "KING" UNIT TESTER
can't be BEAT on
PERFORMANCE or PRICE

The "KING" K-400 \$198.00 Complete as shown

SOLD ON DEFERRED PAYMENTS

For Quality, Flexibility, and all-around performance you can't beat the "KING" K-400 Individual Unit Tester. It has the following "KING" units: (1) Motor and Ignition Tester; (2) Generator Voltage Regulator Tester; (3) All electric Spark Plug Tester; (4) New oscillator type Condenser Tester; (5) Exhaust Gas Analyzer with vacuum and fuel pump test. The hinged front panel forms a bench for testing coils, spark plugs, etc. Two shelves accommodate battery and test leads.

Get NEW 1938 CATALOG

You should have our 1938 Catalog describing complete line of Motor and Ignition Testers with a wide price range. Also large and complete line of Battery Chargers and Testers, Exhaust Gas Analyzers, and other electrical equipment.

Ask your Jobber or Write us Jobber's Name

The **ELECTRIC HEAT CONTROL Co.**
9123 INMAN AVE. CLEVELAND, OHIO
KING Good Products Since 1914 **KING**

2 BIG DATES ON YOUR RADIO CALENDAR

SUNDAY, 9 P. M.: Ford Sunday Evening Hour. Symphony Orchestra and Chorus with world-famous guest artists.

TUESDAY, 9 P. M.: Al Pearce and His Gang. A lively half-hour of fun and frolic. Popular music. Guest stars.

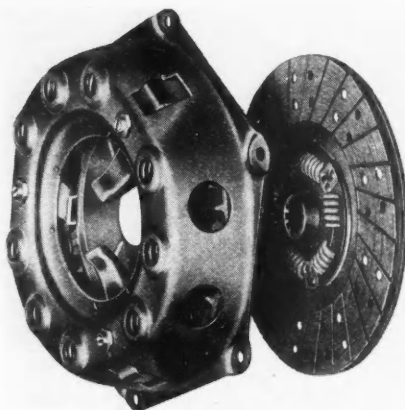
• Both programs at 9 P. M., E. S. T., over the Columbia Network.

FORD MOTOR COMPANY

MISCELLANEOUS

(CONTINUED FROM PAGE 189)

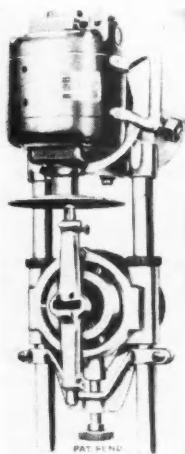
Borg & Beck Clutch



Borg & Beck clutches for 1938 continue to be advanced in design and are constantly approved. They are now available with baffle to keep oil vapors from the facings.

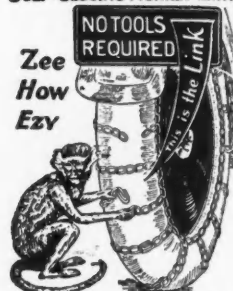
Brake Lining Grinder

The Shepard-Thomason Co., Los Angeles, is now bringing out a new device for grinding brake lining on cars with light trucks. Greater precision is possible in grinding and fitting brakes on passenger cars and small trucks, due to the fact that it works direct from the axle or steering spindle and is provided with an adjustable alignment device which conforms perfectly to the axle regardless of taper. The drum gauge incorporated with this machine is an inside micrometer and a means of interlocking this micrometer with the grinder. Also embodied in this tool is the disk-shaped grinder which permits getting under the backing plates that hold the brake shoes, which practically is impossible by any other method.



The drum gauge incorporated with this machine is an inside micrometer and a means of interlocking this micrometer with the grinder. Also embodied in this tool is the disk-shaped grinder which permits getting under the backing plates that hold the brake shoes, which practically is impossible by any other method.

SELF-CLOSING MONKEY LINK



FREE Samples To Fleet Owners Self-Closing Monkey Links

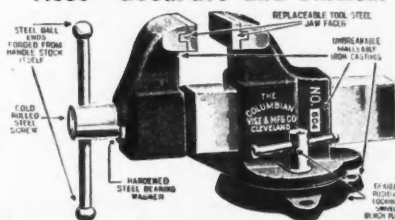
Write us for free samples and state how many trucks are in your fleet and what size they are. We will mail samples immediately.

Why Buy New Chains? Repair With Monkey Links

Your chains aren't worn out when the cross links start to let go. Repair with Monkey Links. Your drivers can do it on the road. No tools required. No appreciable time lost. Chains as good as new. Save money. Increase safety. Send for your FREE SAMPLE now.

Flower City Specialty Co.
ROCHESTER, NEW YORK
At All Reputable Jobbers

COLUMBIAN unbreakable malleable iron machinists' vises—accurate and efficient



SEALED POWER PISTON RINGS

Best in
Old Cars!

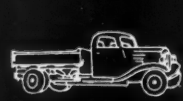


Best in
New Cars!

A ST. PAUL HYDRAULIC HOIST AND BODY FOR EVERY MODEL OF TRUCK



25 Years of Successful
Manufacture of Hydraulic
Hoists for Motor Trucks.



St. Paul
HYDRAULIC
HOISTS AND BODIES

**ST. PAUL HYDRAULIC
HOIST COMPANY**
2207 University Ave. S. E.
Minneapolis, Minn.

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1937

How Can Film Harm a Brand New Truck?

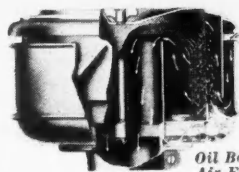
By aging it, Mr. Fleet-operator, before its time. Which means a sick-looking finish, short-lived paint job . . . and the loss of advertising effectiveness.

The remedy? Specify No-Film. It's been specially developed for motor fleet use. Without harming the finish, it swiftly washes away dust, dirt and grime, removes and never leaves film! The proof? Rinse water runs off in flat sheets, not drops, after using No-Film.

For FREE Technical Bulletins write to the Mapor Corporation, 151 W. 46th St., New York. Many large fleet owners have been using our research laboratories for years . . . the services are free to you.

BEFORE YOU START -
NO - FILM
REG. U. S. PAT. OFF.
- THINK OF THE FINISH

Your Fleet Needs This POSITIVE PROTECTION

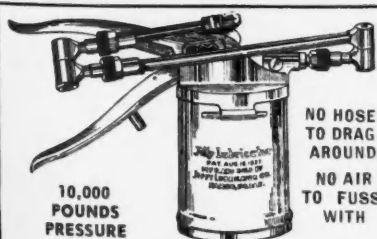


Oil Bath type
Air Filter for
engines

Air-Maze air filters offer better protection against destructive dust and grit because of: 1. 99.83% efficiency. 2. Larger element area. 3. Correct operation at all normal driving speeds. Demand Air-Maze filters for your entire fleet. Write for Catalog AUT-37.

AIR-MAZE CORPORATION
817 Huron Rd., Cleveland, Ohio

AIR-MAZE AIR FILTERS



JIFFY HYDRAULIC LUBRICATOR AND GREASE GUN

The Jiffy Is the Solution to Quick, Easy and Economical Lubrication.

Write for Full Information
JIFFY LUBRICATOR CO., INC.
DEPT. C FARGO, NO. DAK.

LITERATURE FREE

Note: Any of the following items may be obtained by filling in the coupon below.

19. FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis., has announced a new edition of the booklet, "Truck and Trailer Size and Weight Restrictions," available for distribution Nov. 1.

20. ELECTRIC STORAGE BATTERY Co., Philadelphia, has a new booklet entitled, "Electric Starting of Diesels." The booklet outlines the problems of diesel starting and describes interestingly the methods employed in the Exide laboratories for collecting data to be used in designing batteries for various types of diesel installations.

21. GOOD ROADS MACHINERY CORP., Kennett Square, Pa., has ready for distribution a new Good Roads Snow Plow Catalog, No. 102. It is a 68-page book, fully illustrating and describing the many types and models of the company's products together with features and attachments. It should be of interest to any one faced with the snow removal problem.

22. CRAWFORD-AUSTIN MFG. CO., INC., Waco, Texas, offers a new catalog covering all types of the company's Dux-Bak Dome canvas covers and frames. The line meets virtually every need for tarpaulin equipment including frames regardless of style or size of truck.

23. THE RAYBESTOS division of Raybestos-Manhattan, Inc., Bridgeport, Conn., points out the fact that probably more brake failures are due to improper lining material application than to any other cause. To assist in choosing the right lining for the job, the company offers a 48-page booklet giving complete heavy duty brake lining specifications and recommendations for all commercial vehicles, listed by make and model numbers. Its a worthwhile booklet for every fleetman.

24. THE LINDE AIR PRODUCTS CO., 205 E. 42nd St., New York, has an interesting booklet on "Preventing Welding and Cutting Fires." Safe and sane ways of cutting off the possibilities of such fires are intelligently presented.

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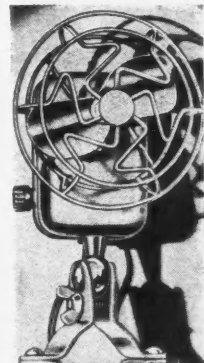
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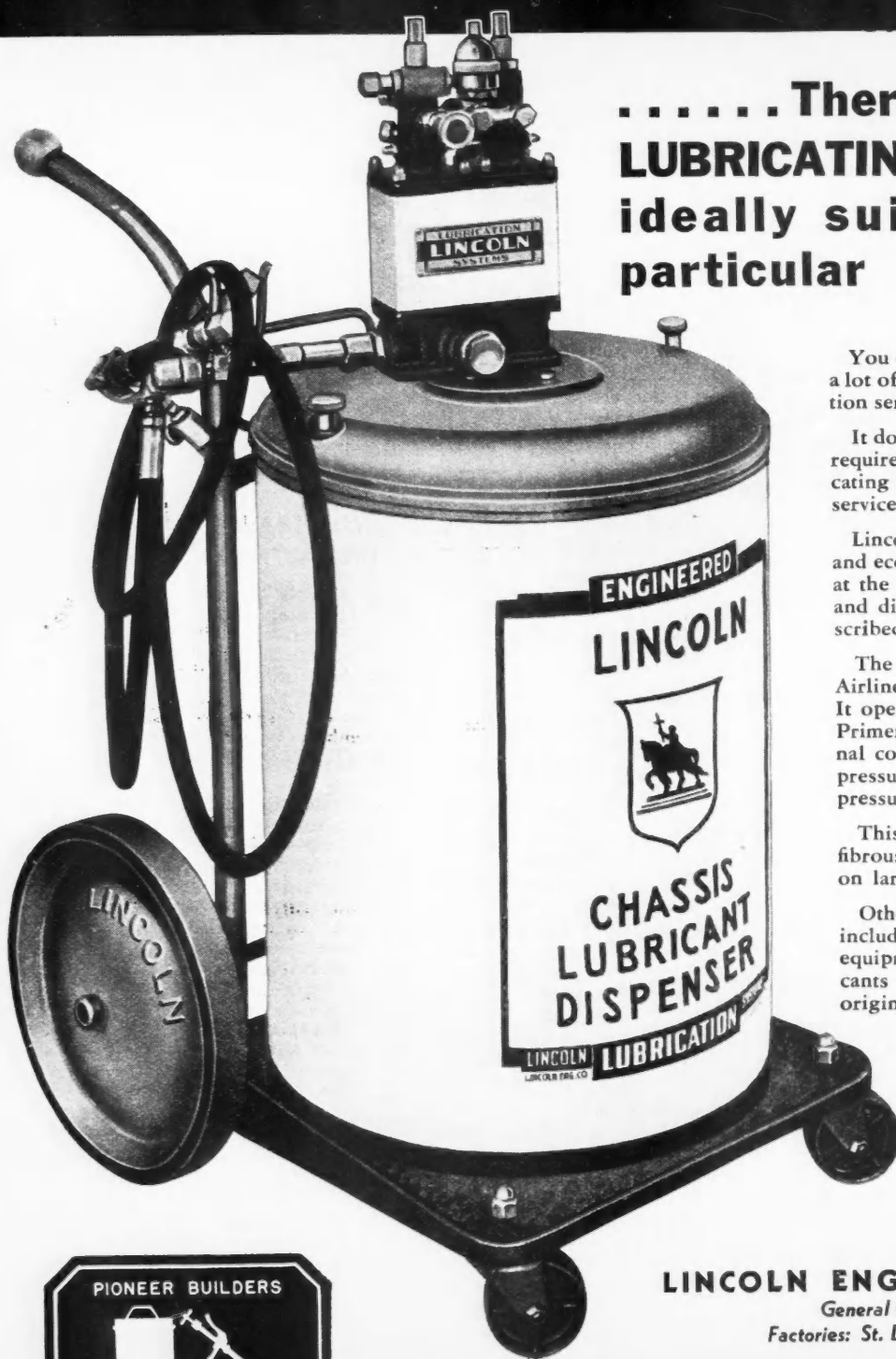
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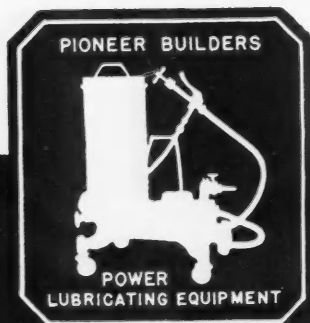
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